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38.

**EXCLUSIVE FIRST RIDE
VICTORY OCTANE**

American muscle that is priced nice and a sign of things to come.

By Steve Anderson

48.

NEW AMERICAN BOB-JOBS

Harley-Davidson Softail Slim S vs. Victory Gunner vs. Indian Chief Dark Horse in a big-bore cruise-off.

By Paul Dean

56.

CAFÉ CRUISE

Star Bolt C-Spec vs. Kawasaki Vulcan S vs. Harley-Davidson Forty-Eight, with plenty of caffeine on the menu.

By Don Canet

62.

THE UN-CRUISER

Ducati shocked the world with the original Diavel. Now there's the 2016 XDiavel, the next step in the evolution of the Italo-American cruiser.

By Mark Hoyer

65.

EXIT THE DRAGON

Performance madness with the S&S Dragon, a 167-hp Harley-Davidson Road Glide Ultra that has never been so ultra.

By Joseph Gustafson

**IGNITION**

- 12. **FIRST RIDE: KAWASAKI ZX-10R**
All-new superbike from Team Green
- 20. **FIRST RIDE: 2016 TRIUMPH SPEED TRIPLE R**
The original streetfighter refined
- 24. **NEWS: BMW HUD helmet in the works**
- 26. **GEAR: Lockdown!** Five ways to get anchored.
- 28. **EVALUATION: SportRX Glasses**—I have a vision!
- 30. **RIDE SMART: Man that barge**—master your giant bike.

COLUMNS

- 8. **UP FRONT**
By Mark Hoyer
- 32. **BIKE LIFE**
By Peter Jones
- 34. **TDC**
By Kevin Cameron

RACE WATCH

- 74. **RACING A LEGEND**
Spondon TZ750!
By Nick Ienatsch

DEPARTMENTS

- 10. **INTAKE**
- 70. **SERVICE**
- 79. **SHOWCASE**
- 82. **SLIPSTREAM**

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HOW WE RIDE

AMERICA IS A DIVERSE MARKET, YET HARLEY-DAVIDSON SALES TELL US WE ARE A CRUISER NATION.

Harley-Davidson is right. All you have to do is cruise (sorry) the sales numbers to see that America's focus is on traditional American-style riding, and nobody does that kind of ride, that kind of life-style, better than The Motor Company.

On Facebook, as in life, all we have to do is post something about a Harley-Davidson, and it might as well have been religion or politics. Or both combined: Massive onslaught of negative versus positive. "Vehement" doesn't even begin to describe it.

Thing is, nobody who loves their motorcycle, whatever it is, is wrong, but Harley-Davidson really is right about the American market.

Harley-Davidson shares its sales numbers by platform. So while we don't know how many Forty-Eights are sold in a year, we do know that 62,407 Sportsters were shipped in 2015. *Sixty-thousand!* Those are among the least expensive bikes in the line yet are generally around \$10,000. The Touring line, FLs like Street Glides and Ultras, sold 114,768 units, the least expensive 2015 being the \$18,449 Road King.

Worldwide across all its platforms, H-D moved 266,382 units, 170,688 of those in the US. It's a roughly 50-percent market share for motorcycles more than 601cc. One brand, half the market.

Other "character" manufacturers that stand clear of dirt bikes and typically don't play under 600cc? Ducati is celebrating its record 2015 in the US with 12,132 bikes sold. BMW's record year was 16,330. Polaris doesn't release unit sales numbers, but a good estimate would put combined Victory and Indian sales in the 20,000 range for 2015.

The two other biggest makers in the US are Honda and Yamaha. Honda reported 235,000 units in North America during 2015 fiscal year, and Yamaha did 123,000 in 2014, the latest numbers I could find. That's boatloads of 50cc dirt bikes all the way up to liter-class sport-bikes and big cruisers.

From our perspective, any motorcycle

can supply you with the freedom you're after, and CW exists for the broad-based enthusiast who wants to know about all kinds of bikes. But Harley-Davidson has done more to make this freedom attractive, accessible, and conveniently purchasable and in so doing has been a true engine in the development and growth of the US motorcycle market across all brands and segments. It's not just the 60,000 Sportsters in 2015; it's the fact that since 1999 H-D has never sold less than 40,000 and once sold more than 70,000 in one year! Add those numbers up...

So while cruisers might not be for everybody, Harley-Davidson knows its market and its customer and, in fact, is right.

And on that cruiser-based note, I'd like to announce the addition of Bradley Adams to our full-time staff as associate editor. Adams, 26, has been with *Sport Rider* magazine for five years and replaces Andy Bornhop, who left us to write about cars, of all things...

Adams is an accomplished racer and tester who started road racing with Willow Springs Motorcycle Club when he was 14 and in 2007 won all three WSMC 600cc class championships. Which isn't altogether surprising because—as a reporter for *Cycle News*—I covered his dad, Curtis, racing at Willow Springs against the likes of Chuck Graves (now the main man behind Graves Motorsports/Team Yamaha).

Between stints shredding tires for SR on sportbikes big and small, Bradley was sneaking out to ride cruisers and adventure bikes on weekends, so we thought it was time to have him join us at CW in our coverage of all types of motorcycles. He hasn't hung up his leathers and will be a huge asset in track testing, but he'll also bring this high-level riding skill to other segments.

MARK HOYER
EDITOR-IN-CHIEF



**THIS
MONTH'S
STATS**

167

HORSEPOWER
OF THE
S&S "DRAGON"
BAGGER

327

COMBINED
DISPLACEMENT
OF OUR
BOB-JOB BIKES
IN CUBIC INCHES

three

WINS RACING EDITOR
IENATSCH TOOK ON
THE SPONDON YAMAHA
TZ750 IN RACE WATCH



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POWER IS NOTHING WITHOUT CONTROL

Intake

KICKSTART THE CONVERSATION



No tumor-like gas tanks, no U-shaped seats, no asymmetrical headlights, no exhausts the diameter of Civil War cannons, and no plastic crap jutting out everywhere—see how great motorcycles used to look? (“Classic Rematch,” Jan./Feb.) Although I love fuel injection, this is why I continue to buy the old stuff.

CHUCK MEGAN

Chuck, even Egan keeps new stuff in the collection too.

EVERYONE LOVES A REMATCH

Loved “Classic Rematch” (Jan./Feb.)! These are two bikes that I lusted after while growing up. The Norton dream was never fulfilled, but my brother and I together did end up buying a 1977 R100RS with a Motorsport paint job and an S fairing. Later, it became a Reg Pridmore project with too much stuff to name, but I never could get it to ride like my Italian motorcycles. Sigh, the BMW would be a nice bike to have today! If you look real close at the pictures, I noticed you got Cornelius, from the original *Planet of the Apes*, played by Roddy McDowall, to do the stunt riding! Great period concept! (Peter, no offense, please! You know us old-timers love you! Just having some fun!) Thanks again, team, for helping the time pass!

DENNIS SHIELDS
APPLE VALLEY, CA

Dennis, you can still find a nice used BMW of the right vintage. Oh, and it's one thing to call EIC Hoyer an ape (just ask his staff), but Egan?!

UNIVERSAL JAPANESE MAGIC

Kudos to Don Canet for his “Igor” article (“Mild-Mannered Godzilla,” Jan./Feb.). I bought a 1997 Bandit 1200S new back in the day and loved the versatility it offered.

Commuting, touring, trackdays at Brainerd International Raceway—I even dragraced it once. Fast-forward a few motorcycles and I longed for that do-it-all UJM-ness the Bandit offered.

Lo and behold, I found a very low-mileage '08 1250SA while trolling Craigslist and commenced tweaking it to my fancy. Dale Walker and the typical online forums helped tremendously. While my trackdays are behind me, I still enjoy bombing around the back roads of Wisconsin, touring, and generally riding the wheels off of it. I'm sure another model will entice me someday, but it will have to top the Bandito Grande.

TOM WEGLARZ
ST. CROIX FALLS, WI

TIGHT WIRE ACT

Mr. Cameron brought a smile to my face when he mentioned his Robinson wire

twisters in his recent “Riches” article (TDC, Jan./Feb.). As a former USAF F111A crew chief during the Vietnam era, one of our standard-issue flight-line tools was a pair of Milbar safety-wire pliers. Used often and in the exact manner he described. Interesting to hear they are becoming obsolete. If you haven't already, try to obtain a copy of Dyke's *Automobile and Gasoline Engine Encyclopedia*; it's an excellent book to add to your collection.

JIM WALKER
DUBLIN, OH

APPLES AND ORANGES

Thanks for doing an up-to-the-minute report on the new KTM Super Duke GT. It's a good replacement for my Hypermotard. More power (twice!) and hard bags! I love traveling with my Hyper. It has a great way of delivering its power, but a little more would be great. I think I'm going to like having all those modern electric aids too. Who needs the big Super Adventure anyway? Maybe a comparison between those two bikes and the S1000XR? There are so many great bikes out now that a comparison between models within a brand makes sense. Like the BMW S1000XR versus the GS versus the RT?

TIM REGEHR
CYCLEWORLD.COM

SHOELACES

In your Jan./Feb. 2016 “retro inspiration” gear piece, three of the five boots have shoelaces. You should discourage riders from wearing laced motorcycle boots. I've seen people fall down and break their arms because laces got caught in the pegs as they stopped. Ironically the next article was all about bones.

ROY HOOPER
OJAI, CA



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Ignition

THE RIDE STARTS HERE



BY THE NUMBERS

2,000

DOLLARS: Manufacturer rebate offered to licensed roadracer purchasing 2016 ZX-10R for competition use.

210

HORSEPOWER: Claimed peak output at 13,000 rpm with ram air. Figure 10 hp less without ram air and around 180 plus at the rear wheel.

CW FIRST RIDE

2016 KAWASAKI ZX-10R

Title Defense By Don Canet



Kawasaki has earned the right to milk a championship hangover with two WSBK titles to its credit in the past three seasons. But Team Green isn't falling into any such slumber, as the Ninja ZX-10R has undergone a major generational update for 2016. At stake is more than simply providing reigning team rider Jonathan Rea the best possible platform on which to defend the crown. Of greater importance to sales is a long overdue shot at topping the stock literbike shootouts.

As so often stated in the past by any given manufacturer, Kawasaki says the goal of the project was to make the ZX-10R easier to ride fast. To this end, the electronics suite that has largely gone unchanged since first appearing on the 10R in 2011 has seen major improvement. This includes a completely revamped Sport-Kawasaki Traction Control (S-KTRC), newly added engine-brake control, a launch-control mode, quickshifter, and smarter optional KIBS (Kawasaki Intelligent Braking System) cornering ABS. The system now utilizes a Bosch five-axis Inertial Measurement Unit (IMU) measuring longitudinal, transverse, and vertical acceleration along with roll and pitch rates. Kawasaki's proprietary software calculates yaw rate, a sixth degree of freedom said to sense the rear end stepping out during a power slide. Kawasaki touts this S-KTRC system as the most advanced of all current

offerings due to its "predictive" rather than reactive nature of maximizing cornering grip and exit drive.

Mechanical changes are many with nearly a pound shaved from the crankshaft along with a lighter engine balancer and slipper clutch, resulting in quicker response, acceleration, and improved transitional-steering agility. A redesigned cylinder head features straighter and wider ports, 1mm-larger-diameter titanium exhaust valves (Ti intakes as well), long-reach spark plugs flanked by larger liquid-cooling passages, and a revised combustion chamber for improved intake/exhaust efficiencies. Shorter/lighter pistons made of a new heat-resistant alloy have a dry-film lubricant coating on the skirts.

Feeding the fury are a bank of 47mm ride-by-wire throttle bodies drawing from a 25-percent-larger (10-liter) ram airbox. Spent gases exit through a titanium-alloy header said to have pipe diameters and length very similar to race-use headers.

The vertically stacked cassette-style transmission has revised ratios providing slightly lower bottom and top gears and more evenly spaced gaps throughout the six-speed box. The quickshifter trigger is designed to allow auto-blip downshifts when unlocked with the optional Race Kit ECU.

Chassis changes have focused on improved front grip and feel, more consistent feedback, and handling agility.

GREEN GRID:

Kawasaki has posted \$2 million in contingency rewards and will provide Team Green trackside support at many Stateside roadrace events in 2016.



TRICK PARTS: Showa Balance Free Fork features an external compression chamber containing pressurised nitrogen gas. Adjustable compression and rebound damping circuits are located at the base of the fork with spring preload adjuster on the cap. Lightweight titanium header comes standard. Race Kit Parts are for track use only and are readily available through Kawasaki dealers.



The engine is mounted higher and more forward, along with the steering head now located 7.5mm closer to the rider. The cast-aluminum twin-spar frame is said to be lighter, using fewer welds and less complexity in its construction. The swingarm is nearly 16mm longer, utilizing tuned-wall thickness and the addition of upper bracing to optimize lateral and torsional rigidity; overall wheelbase has been stretched by 12mm. Steering geometry is a conservative 25 degrees of rake and 4.2 inches of trail, but Race Kit steering angle collars are available. The most visual of chassis updates is a 43mm Showa Balance Free Fork (a production sportbike first) derived from the similar design used on the factory WSBK machine.

Attending the world press introduction at the Sepang Circuit in tropical Malaysia offered an opportunity to sample the 10R on a world-

class track. For the first 20-minute on-track session, the bike was fitted with Bridgestone Battlax R10 supersport race rubber with ABS toggled on. Kawasaki positions KIBS as a street/trackday feature and describes the cornering management functionality as providing more neutral steering feel during trail braking. The 3.45-mile, 15-turn layout offered a couple of prime corners to ride the front brake to deep lean angles. Minor brake lever



2016 KAWASAKI ZX-10R

ENGINE TYPE
DOHC inline-four


DISPLACEMENT
998cc

SEAT HEIGHT
32.9 in.

FUEL CAPACITY
4.5 gal.

CLAIMED CURB WT.
454 lb.

BASE PRICE
\$14,999 to 16,299

A dark, high-contrast image of a motorcycle helmet, viewed from the front. The helmet is mostly black, with a prominent white, glowing visor that has a slightly irregular, shield-like shape. The background is dark and textured, possibly asphalt. The overall mood is mysterious and intense.

UNTIL NOW, WE HAVE BEEN ASKED TO
TAKE SIDES. TO CHOOSE BETWEEN WICKED
OR VIRTUOUS, BRUTAL OR SOPHISTICATED,
REFINED OR WILD, GENTLEMAN OR BASTARD.
YOU DESERVE BOTH.



fluctuations manifested the few times I had the nerve to invoke KIBS interaction nearing an apex. Survival instincts die hard.

Battlax V02 race slicks and deactivated KIBS were slated for three remaining sessions. Even with the higher-grip setup, circuit-specific suspension settings derived by Kawasaki's test rider were unchanged from the DOT race-tire setup. Further, damping settings were hardly different from stock, and only minor rear ride height was added.

"Easier to ride fast," proved well founded, as the balance, stability, and positive feedback lent loads of confidence. The Showa fork was of particular interest and provided exceptional support and feel under hard braking and an overall degree of ride compliance and feel beyond the Showa BPF (Big Piston Fork) of last year's machine. Entering turns one and 15, both of which involved 170-mph approaches and a flurry of backshifts from fifth to first gear, put the combination of engine-brake control and slipper clutch to the test. Even running in hard with a closed throttle (no blips) and rowing down through the gears displayed no drama or instability. While standard engine-brake control offers Light or Off settings, the Kit ECU allows gear-specific tailoring of this feature.

With a Brembo radial-pump master cylinder connected via steel-braided lines to M50 monoblock four-piston calipers and 330mm front rotors, I was surprised at the amount of effort required at the lever to maximize stopping. While initial bite and power are ideal for the road, a

change of pad compound may be in order for those who prefer a more race-oriented feel.

Throttle pickup in High Power Mode is edgy yet controllable with linear delivery from any point in the 14,000-rpm rev range. When revs dipped to 7K rpm at the apex of the tightest low-gear hairpin, I found myself wanting more midrange. Once beyond 9,000 rpm, I was grateful for S-KTRC's traction/wheelie control. Like the current Yamaha YZF-R1, the front seldom elevated more than a foot or so above the tarmac and settled back down smoothly. Unlike the R1, the Kawi's delivery doesn't exhibit a sharp torque increase in this region, making it less wheelie prone in the first place.

Snicking upshifts right on cue with light and seamless precision, aided by the LED bar-graph

tachometer flashing a very visible shift indicator warning, produced fluid drives between each corner. Minimal buffeting while tucked behind the new windscreen at high speed indicates the pressure-reducing vents work well, which makes the cockpit an ideal office for conducting business. A choice of street or track LCD dash displays prioritizes the information provided.

Ridden on the boil, my seat-of-the-pants dyno suggests this new ZX-10R has the R1 covered in power and acceleration but lacks the brute delivery of BMW's S1000RR. The real question, however, is **how the class contenders stack up in overall performance and accessibility.** My take is that Jonathan Rea's talent is not required to tap the new Ninja's assets. **CW**





the gentleman X the bastard



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CW FIRST RIDE

2016 TRIUMPH SPEED TRIPLE R

The Streetfighter godfather By Thomas Montano

You have to hand it to Triumph for staying true to its soul with the Speed Triple. Triumph has always had a certain sense of attitude and allure surrounding it. Bonneville and Tridents ruled back in the day, but neo-classics like the Speed Triple carry on its personality in the John Bloor era.

Since '94, the Speed Triple's core design principles have remained intact: a brutish up-bar, café-style motorcycle. The new 2016 Speed Triple S and R models might seem similar to their

predecessors, but they have evolved quite a bit. A redesigned 1,050cc three-cylinder powerplant incorporates 104 changes. The result is an increase in torque and power across the entire rev range, with torque peaking at a claimed 83 pound-feet at 7,850 rpm and horsepower up to 140 at 9,500 rpm. Key changes include new pistons, crankshaft, a redesigned cylinder head complete with a new combustion chamber shape and better-flowing intake ports, new transmission ratios, and an

updated slipper clutch.

Equally important is the new ride-by-wire throttle system and ECU that's borrowed straight from the Daytona 675 R supersport. The system features five Rider modes with interchangeable ABS and traction control settings. New throttle bodies are fed by a redesigned airbox, which has a more direct air-intake inlet positioned between the redesigned dual headlights. A lighter and better-flowing (a claimed 70 percent) exhaust system completes the equation.



The introduction for the 2016 Speed Triple took place just outside of Barcelona, Spain. Greeted by sunshine but cold temperatures, we focused on the R model, which has the same power output as the S model but features Öhlins suspension components front and rear. First up, we hit the motorway, and the big triple never hesitated or coughed while modulating the throttle, simply providing smooth and steady fuel delivery. Roll-on performance is quite good with plenty of usable grunt across the rev range.

Lucky for me, the Speed Triple was comfortable and accessible. At first, I thought that the bike felt smaller than the previous Speed Triple, but it's really a revised seating position that creates the sensation. The seat has a smaller central pad and is 20mm narrower at the front with sloping sides, complemented by a narrower tank. This change moves the rider farther forward and more over the front of the bike.

Giving the bike a good thrash-

ing, we found it handled well too. The 43mm Öhlins NIX30 fork provides excellent feel and feedback, and the damping controlled input from the unpredictable road surfaces nicely. Out back, the Öhlins TTX 36 RSU shock helped keep the bike in line and only allowed unwanted movement under extreme conditions. The bike is responsive with the upright handlebars positioned for good

leverage. The R is easy enough to turn and pretty stable at speed, but on some of the tighter sections you will have to put more effort into the bars to finish off the corner.

The Speed Triple was a pleasure on the street, but an afternoon track session at the tight Calafat Circuit would tell the whole story. Turn-in and trail braking were very predictable, and midcorner stability was

DETAILS:

Bar-end-mounted mirrors are new for 2016. Newly restyled twin headlights should appease the critics who wanted the old-school round units back and hated the elongated lights on the previous model. A trick Öhlins shock is standard on the R model.



2016 TRIUMPH SPEED TRIPLE S/R

ENGINE TYPE
DOHC inline-3

DISPLACEMENT
1050cc

SEAT HEIGHT
32.5 in.

FUEL CAPACITY
4.0 gal.

CLAIMED DRY WT.
423 lb.

BASE PRICE
\$13,200/\$14,900



excellent. But the Speed Triple does require a fair amount of effort at the bar to get it to change direction quickly. At some point you will need to slow down, and the Brembo 320mm semi-floating rotors with four-piston, radial-mounted mono-block calipers performed very well with great feel and power. Braking extra hard on the track caused the fork to bottom using Triumph's recommended setup, which in turn made it somewhat difficult to get it turned. But the slipper clutch was working well, the rear end staying in line and stutter free.

The bike features five Ride modes: Rain, Road, Sport, Track, and Rider (the last of which can be customized). ABS and TC can also be turned off in the menus. The ride modes were easier to distinguish on track. In one session, I tried my own custom Rider map with the Track throttle setting, which was quite abrupt, but the bike had excellent torque and accelerated quickly. The Track setting has the least amount of TC interference, and with the ABS turned off it was about as unruly as possible, which I enjoyed.

The rear end was hooking up nicely and pushing me out of the corners with only a slight hesitation when TC kicked in. I also tried Sport mode and found response smoother with slightly less power but equally fun to ride.

The thing I enjoy the most about the new Triumph Speed

Triple is the fact that it is a well-rounded bike capable of performing excellent on street or track. It's no longer the most potent bike in the class, having to go head to head with KTM's Super Duke R and BMW's S1000R, but it's very enjoyable to ride and will always put a smile on your face. **CW**





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These garments also feature magnetic closing pockets that double as air vents for increased circulation in the heat. Both also include a wide array of fit adjustments, SAS-TEC protectors and waterproof pockets making this outfit perfectly suited for adventure and touring riders.

Available in men's and women's sizes.

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HEAD-UP!

BMW brings information to eye level in prototype HUD helmet

By Blake Conner

→ It's almost shocking that head-up displays (HUD) in motorcycle helmets aren't common by now. The technology to project vital data up into the pilot or driver's field of view has existed for decades in both the aviation and automotive industries. Applying the technology to motorcycling could prove to be even more beneficial by keeping a rider's eyes up and focused on the road.

BMW has offered optional HUD systems in its cars since 2003 and is now keen to apply the technology to motorcycling, showing its first concept at the Consumer Electronics Show in Las Vegas earlier this year.

BMW Motorrad's interpretation of the HUD helmet features a "mini-computer" and integrated speakers in addition to the display screen that sits in front of the rider's right eye.

BMW's biggest interest in the technology is to provide the rider with pertinent information that would otherwise require a glance away from the road. The BMW helmet will be paired to the motorcycle so that information—such as tire pressures, oil level,

fuel level, speed, gear position—and speed limit can be displayed inside the rider's face shield as conditions require. Future potential uses would include navigation, rearview and forward-facing cameras, traffic updates, and danger warnings: "By means of the future V2V (vehicle-to-vehicle) communication, it might also be possible to display information in real time, for example to give due warning of any suddenly impending hazards." BMW hopes to bring the helmet to market in the next couple of years.

But BMW isn't the only company in this space. Multiple startups have been racing to be the first to market with a functional, affordable HUD helmet application. Skullly Systems' AR-1 helmet is currently being demo'd around the US, with deliveries of consumer units expected by summer 2016. Another start-up, Nuviz, is concentrating its efforts on an accessory that attaches to the outside of an existing full-face helmet of the rider's choice.

In the meantime, it appears Skullly will have a good head start, with the first-generation AR-1 offering a 180-degree rearview camera, Bluetooth smartphone connectivity to allow voice-activated navigation, music streaming, and speed display. Features will be added, no doubt, as more motorcycles allow electronic devices to be tethered to them.

BMW's advantage will be in "owning" the motorcycle connection and R&D scope, including existing HUD experience in autos. Watch this space. It's going to get busy. *CW*



A low-angle, first-person perspective shot from a motorcycle. The handlebars, mirrors, and part of the dashboard are visible in the foreground. The road ahead is a two-lane asphalt road with white dashed lines, curving into the distance. The sky is a vibrant orange and yellow, filled with soft, glowing clouds, indicating a sunset or sunrise. The overall mood is peaceful and adventurous.

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NEW IDEAS

LOCKDOWN!

Five ways to get anchored **By Don Canet**



1

THROTTLE LOCK

Give your right wrist a rest with the **Kaoko Throttle Stabilizer** (\$99.99–\$229.99) designed as a bar-end weight replacement with a variable-friction throttle lock. Its intuitive twist on/off operation serves as a damper for reducing throttle sensitivity, slop, or as cruise control. There are more than 160 models to match OEM bar-end weight and styles. → (855) 255-5550 twistedthrottle.com

2

PHONE STAY

Smartphones offer many uses, such as GPS navigation and music playback, that the modern motorcyclist may find beneficial mid-ride. The **Ram Mount Tough Claw with X-Grip** (\$51.99) secures your device to the bars and offers convenient ball-pivot adjustment. Optional mounts abound, including a suction-cup and GoPro attachment. → (206) 763-8361 rammount.com

3

MOTO MOTION SECURITY

The **ABUS Granit Detec-to X-Plus 8077** (\$179.99) is made of special temper hardened steel and incorporates 3-D alarm sensor technology. Once armed and on the brake disc it will detect any motion, emitting a warning sound before the 100-decibel alarm fully triggers—a perfect reminder if you forget the lock is on your bike. → (623) 516-9933 abus.com

4

THEFT-DETERRING HELMET HANGER

Tired of toting your helmet around? The **HelmetLok and T Bar** (\$32.50) is a carabiner-style lock with a programmable combo. The locking arm pivots outward, easing the task of clipping onto a handlebar or frame tube. The included T Bar accessory is useful for attaching helmets with ratchet-strap mechanisms. → rockycreekdesigns.com

5

KEYS TO THE VAULT

Locks are all good so long as you don't lose the key. The **Icon 1000 Belt Loop Keychain** (\$35) keeps keys to the city safe and secure at the hip. The vintage-style burnished leather strap fits over most belts and secures with a custom cast post-clasp featuring a quick-release trigger hook that allows quick access to your keys. → (658) 758-1111 rideicon.com

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CW EVALUATION

SPORTRX PRESCRIPTION SUNGLASSES

Peak vision By Don Canet



SPORTRX PRESCRIPTION SUNGLASSES

sportrx.com
PRICE: \$530

UPS

- ✚ Great selection, free shipping
- ✚ Many motorcycle-friendly wrap-style frames
- ✚ Progressive lens great for reading and riding

DOWNS

- ✚ My prescription doesn't work with wraparound lenses
- ✚ With clear lenses, Chainlink looks like Buddy Holly specs when the lens is clear

A fundamental for safe and fun motorcycling is having a clear view of the road ahead. Even if you're not an open-face helmet wearer, the right pair of prescription shades can make a big difference in how well you see the line threading a fast curve. SportRx is a San Diego, California-based company specializing in sports eyewear with hundreds of popular frame and goggle options. Its in-house opticians offer expertise in helping customers select the best lens suited to our favorite outdoor activities.

Although I visited the SportRx storefront, it's primarily an online retailer. I've worn corrective lenses during my entire professional riding/racing career and have developed a few preferences in suitable riding glasses.

As a sportbike rider, my foremost concern is selecting a frame style that allows an unobstructed view when in the head-down full-tuck position—what I call peering through the eyebrows! Another important factor is the frame and temple/earpiece must comfortably slip into your particular full-face helmet and not lift or rattle around when experiencing helmet buffet at speed. The crux is that not all helmet interiors are similar, so a frame that fits well within one model helmet may experience interference if worn within another lid. Try before you buy. SportRx will send a selection of frame styles to try with your helmet, providing a full refund upon the return of those that don't fit, and free shipping is offered.

I selected a pair of Oakley

Chainlink Asian fit (larger nose bridge pads) due to the increased vertical viewing angle and good fit within the Shoei X-Twelve I wore in the Pikes Peak Hill Climb. Despite my prescription presenting a challenge according to my personal optometrist, SportRx nailed it with a progressive digital lens. I'm glad they recommended Day & Night Prebuilt Lenses, a light-reactive lens that transitions from clear to tinted and has an ultra-premium anti-reflective coating that reduces glare and repels dirt, oil, and water.

They're so comfortable that I wear them daily on and off the bike. After several months of use, the lenses remain scratch-free. **CW**



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Roll your own

RIDING SKILLS

MAN THAT BARGE

Top tips for handling heavy touring rigs **By John L. Stein**



“She’s mighty-mighty just lettin’ it all hang out.” Funny, but for years I thought that 1977 Commodores song was about a brick house. Well, think again because the curb weight of a Gold Wing has swelled from 626 pounds in 1977 to 904 for ’16, while the latest Harley-Davidson Road Glide Ultra weighs in at a hefty 916 pounds. Add 300 to 500 pounds for yourself, your lady, and your luggage, and the whole, cheesy enchilada crushes the scale at well over a half ton. Mighty indeed!

Physics says that when mass is doubled (a big touring bike is about twice the weight of the average streetbike), the kinetic energy also doubles. It’s easy to guess this won’t help a touring sled match either a Honda CBR650F (461 pounds) or H-D Street 500 (489 pounds) in agility.

So, with this much tonnage in play, how exactly do you save your butt in an emergency situation? Practice skills, think ahead, and ride at speeds appropriate for the weight of your rig. It’s easier to avoid trouble before it happens than fight for control.

Here are four tips for smooth sailing on that big, beautiful barge on wheels.

- **LOOK AHEAD.** More mass can result in longer stopping distances; a longer wheelbase and more relaxed steering rake widen turning radiuses; while loaded side bags increase overall width and can raise the center of gravity. Accordingly, increase following distances, engineer turns as smooth, steady arcs, and continuously gauge gaps and distances.
- **PRACTICE A LOT.** Motorcycle cops make maneuvering gigs look easy.

Well, it isn’t, but it will get easier if you practice tight maneuvers, sudden stops, and emergency-avoidance actions. Make an unused parking lot your own to practice building crucial muscle memory.

- **CHOOSE SOLID FOOTGEAR.** The last thing you need when propping up a half ton at a stoplight or backing into the Riders’ Roost Motorcycle Resort is squishy and unsupportive sneakers. Investing in good-quality boots (motorcycle-specific is even better) will help provide a better foothold and superior protection.
- **GO ALL ARNOLD.** Regular weight training for the legs, arms, chest, and core will help you handle a half ton of teetering touring bike with authority. A couple of weeks into a program and you’ll notice a difference. **CW**

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THIS BIKE SUCKS

A PRINCESS LOOKING FOR THE PEA **BY PETER JONES**

It's a dangerous job, that of a motorcycle journalist. Dangerous from both behind the handlebars and in front of the keyboard. And I'm not just talking about forgetting to turn off the blinker or mixing metaphors.

The biggest risk a motojournalist faces is in being evaluated for how he or she evaluates. It's difficult to manage the course between conflicts of interest and reasonable judgment while trying to be fair, meaningful, and salient. One needs to inspire the reader but not unjustifiably insult bike makers, and a motojournalist must actually say something about something. Damning with faint praise is spineless, but using the word "sucks" is just plain mean. Plus, using that word is also an admission of being illiterate. It does, however, wake everyone up.

Readers might have doubting suspicions when evaluating journalists because it's a motojournalist's job to evaluate products that, by economic necessity, are manufactured by the same companies that purchase the advertising that supports the efforts to evaluate those products. This is a conflict of interest. An evaluation of a product manufactured by an advertiser is a conflict of interest—no matter how negatively critical that review might be. Conflict of interest doesn't mean someone is lying, being delicately kind, or being purposely misleading; it simply means there are interests in conflict. There is a moral road through this conflict; it's called honesty.

I think readers have always known this, and so their habit is to read motorcycle publications with a critical eye, evaluating the evaluations to determine if a review tells it like it is or not. Some start-up publications try to win over readers by publicly announcing this age-old conflict of interest—as if no one has ever noticed it before—and then assuring readers that they have no conflict and

will always be above contempt. Whether or not that plays out in their evaluations I leave up to readers to judge, but sometimes self-marketing gets confused for journalism.

For my money, evaluating motorcycles has become more difficult but also more fun. In years past it was an easier job for journalists because manufacturers were still making obvious mistakes. Some bikes actually did suck; this had to be stated fairly and professionally.

Most of today's motorcycles are stupid good. But there is always a great deal to say about the experience of riding any bike, and different ones behave differently and have different personalities. The challenge is always to identify and communicate a motorcycle's unique character. This needs to be accomplished without being foolish enough to evaluate a cruiser for not being a sportbike or vice versa.

A recently added adventure to motojournalism is the intense marketing efforts of some manufacturers. I usually take such overreaching marketing to imply the product is flawed. It's also weak to pass this marketing on to readers. A review should come from what the motorcycle is, not from a manufacturer-supplied narrative of an imaginary consumer.

Managing all of this makes for an odd relationship between journalist, ad sales, and manufacturer. But the worst solution is for media to just fill the spaces between the ads, though in my career a past editor suggested that to me. My solution has been to be a bit of a boy, always showing a measured amount of irreverence, to the chagrin of the manufacturer and entertainment of the reader. Unfortunately, a couple of times I've totally messed up in judging that measure. A better man would apologize.

I'm still trying to decide if I wish I were a better man. *CW*



BY THE NUMBERS

two

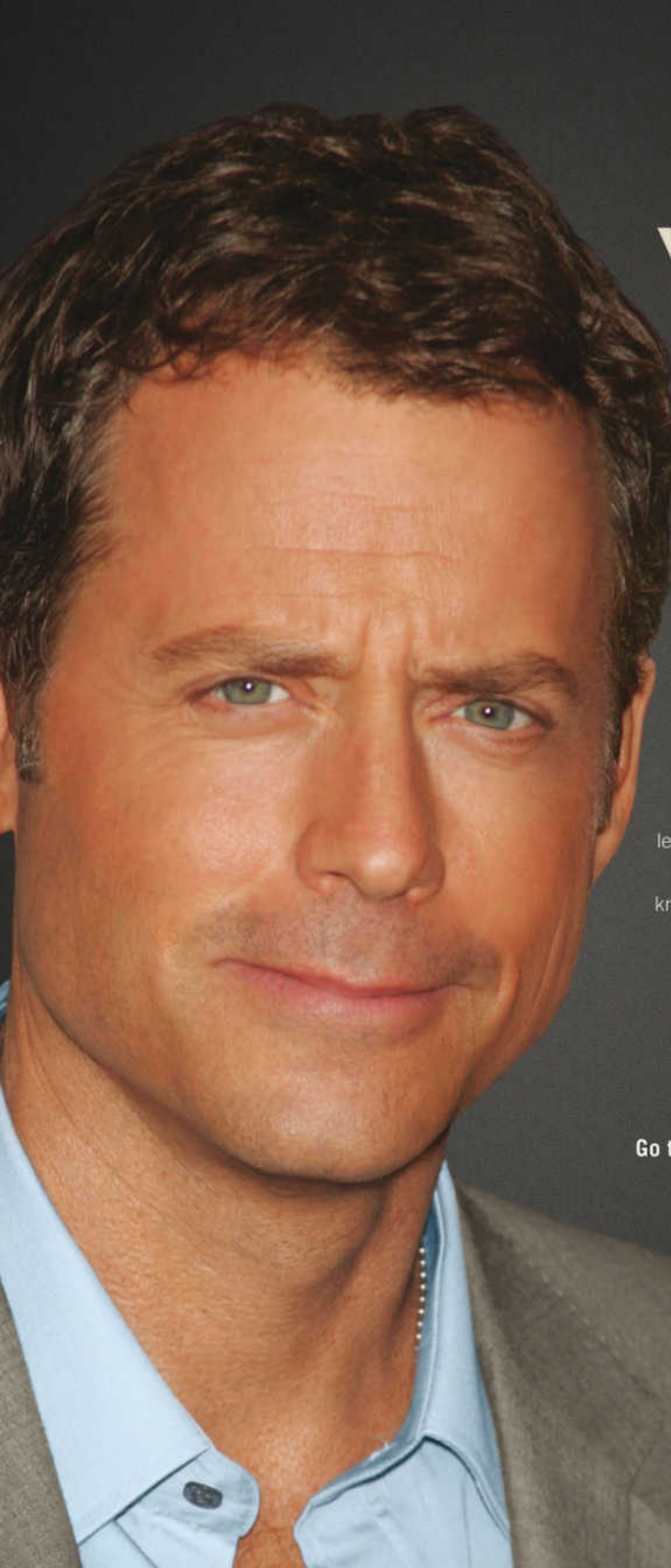
NUMBER OF
MOTORCYCLES I'VE
CRASHED AT NEW-BIKE
INTRODUCTIONS
(THAT I CAN REMEMBER)

2

NUMBER OF
MOTORCYCLES
BORROWED FROM
MANUFACTURERS
THAT I'VE CRASHED

∞

NUMBER OF TIMES
I'VE APOLOGIZED
FOR THE ABOVE
INDISCRETIONS



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*According to the Centers for Disease Control and Prevention (CDC), colorectal cancer is the second leading cause of cancer death in the United States when men and women are combined.

INDIAN HISTORY

BIG IMPACT FROM SURPRISINGLY SMALL NUMBERS

BY KEVIN CAMERON

So much history was created by so few Indian motorcycles, in a sport that was then such a tiny part of the American scene. In its greatest years, Indian was a major innovator, pioneering all-chain drive and a two-speed transmission at a time when belt drive and “light pedal assist” were so common that Isle of Man TT race authorities banned pedaling in 1911. In that year, advanced Indians swept the TT, 1-2-3. Because motorcycles are the cheapest basic transportation, those early years were a golden age for Indian, peaking in 1913 with 31,900 machines produced.

Putting that in perspective, Indian in round figures produced a total of 400,000 machines from its beginning in 1901 to its end in 1953—a number that Honda in 2014 produced every eight and a half days. In 1929, in the prosperity that immediately preceded the Great Depression, there was one motorcycle registration in the US for every 800 Americans. Four years later, in the depths of the depression, when Indian produced only 1,657 machines, there was one registration for every 1,300 Americans. Japanese motorcycles barely existed, and none was imported here. There was no Ducati and no KTM. There *had* been 200 American motorcycle producers, but manufacturing economics or the depression killed almost every one of them.

In 2014, there was one motorcycle registration for every 37 Americans.

Indian continued to be a technology leader, demonstrating first with the Powerplus of 1916 and then in the evolving Scout line the value of rapid squish-assisted combustion. Franklin’s Irish-born racer-engineer Charles B. Franklin had independently discovered that causing part of the piston to closely approach the head at TDC “squished out” a fast-moving jet of mixture that accelerated combustion in the main chamber. Such rapid combustion burned up the

charge before heat effects could lead to combustion knock—detonation. This allowed side-valve engines to run safely on compression ratios that gave good pulling power.

Much romantic admiration is lavished upon the eight-valve OHV racers built by both Indian and Harley, but their fast-wearing exposed valve gear and inability to pull from lower revs without knock kept them from non-track use. Franklin’s flatheads were production-practical because their entire valve trains were light in weight, fully enclosed, and lubricated, and their fast combustion gave them the ability to accelerate from low revs.

In a business sense, Indian did more things wrong than right, but the quality of the machines and their technology forged a lasting reputation. Between the wars, 1919 to 1939, Indian and Harley exported one-quarter to one-third of their production. In 1920, an obscure New Zealander named Burt Munro bought one of Franklin’s new Scout models, and we all know where that led. Many a famous European auto or motorcycle racer got his start on an Indian. In the 1920s, as British makers were switching from side valve to OHV, Franklin too produced advanced OHV single-cylinder prototypes—but the company could never get far enough ahead financially to try them in the market. Harley, more practical and less flashy, attended to the basics and survived. It would be Harley, not Indian, who would first bring an American OHV machine to quantity production—its EL of 1937.

Encouraged by its early sales success, Indian constructed a giant brick plant in Springfield, Massachusetts, with a notional capacity to build 35,000 bikes a year. But in 1913 Ford’s Model T hit the market, quickly satisfying the demand for cheap basic transportation. Indian sales declined. Ford’s innovation was rational mass production, which cut costs to the bone—especially when com-



BY THE NUMBERS

203,000

NUMBER OF FORD MODEL T CARS ASSEMBLED IN 1914. EACH CAR TOOK 93 MINUTES TO BUILD AND WENT FOR \$440.

1 MILLION

MODEL Ts PRODUCED IN 1922. HALF THE CARS IN THE WORLD WERE NOW FORDS.



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pared to the modified craftsman methods still being used in the motorcycle business. Ford could cut costs by such means as plunge grinding of crankshaft journals on new high-production machines, while Indian and Harley continued to make their cranks from five pieces—two taper-and-nut mainshafts, two shaped flywheel-counterweight discs, and a single taper-and-nut crankpin. In a time when a V-twin motorcycle cost \$285 the bike makers could only look on in amazement as the price of a Model-T Ford plummeted with every production enhancement.

When World War I ended, there was a post-war inflation (governments pay for wars by printing money), pushing up materials prices and wages. A big reorganization momentarily reversed Indian's splash into red ink, and the popularity of the Powerplus-derived Scout and its big brother the Chief expanded, which

brought a few good sales years.

Then came the Great Depression, which led to irrational acts, such as selling off the Scout tooling. And with Europe heading for war, here came foreign orders for all the essentials—motorcycles among them. Indian again produced thousands of military motorcycles but failed to read the contract fine print, losing money on wartime parts production. Then came a decision that looked timely—to widen the motorcycle market by producing lighter sporting machines. It would work for Britain in the post-WWII years, but Indian's new parallel twins failed from reliability problems.

Yet despite this, demand existed for the Scout. A strong visual feature of Indian's flathead V-twins was their exhaust header pipes, which pointed nearly straight down from the ports. This was an advanced feature, for if we mentally invert those side-mounted

**...IN 1913
FORD'S
MODEL T
HIT THE
MARKET,
QUICKLY
SATISFYING
THE
DEMAND
FOR CHEAP
BASIC
TRANSPORTATION.
INDIAN
SALES
DECLINED.**

exhaust valves and ports to new positions atop the cylinders as overhead valves, their up-flowing ports suddenly look very modern, like those of Ducati's Testastretta. Experience had taught C.B. Franklin the value of big valves and high-flowing ports—not only for good performance but also to minimize the inherent problem of side-valve engines; cylinders are distorted by the close proximity of hot exhaust ports, possibly leading to leakage, lubrication failure, and in extreme cases to seizure. Scout and Chief exhaust ports were surrounded by big cooling fin area. A free-flowing exhaust is another great aid to keeping an air-cooled engine reliable because it gets the hot stuff out quickly.

The temptation in looking at these 80-year-old engines is to see only quaintness, but in fact every engine design is a well-considered response to the big problems of the moment. *CW*

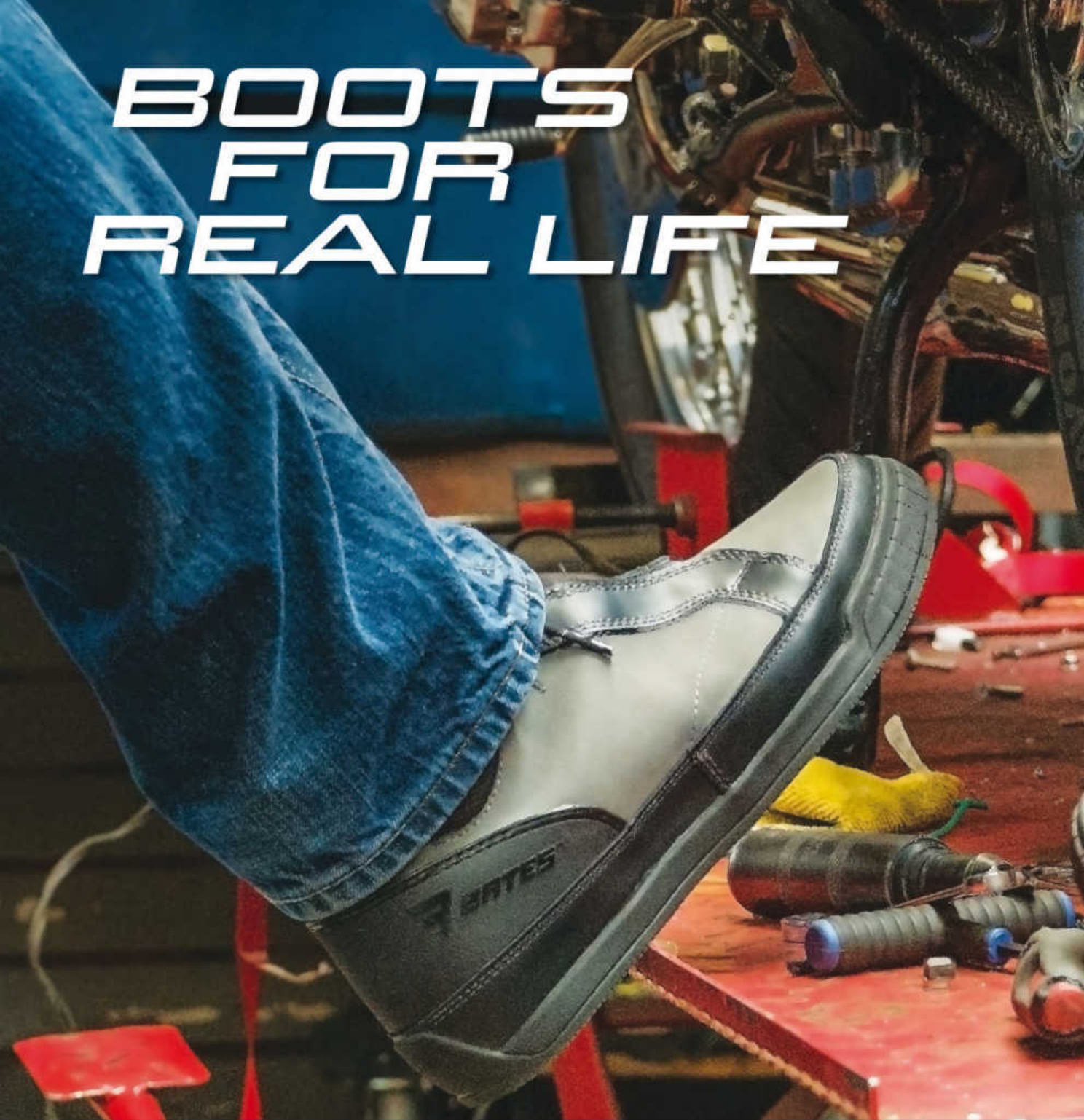


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EXCLUSIVE FIRST RIDE





VICTORY'S NEW 1,200cc
CRUISER GETS INDIAN
SCOUT BONES AND A
SPORTING TWIST

By Steve Anderson

*Photography by
Nick Ferrari*



For those of you who haven't noticed, Polaris, the parent company of Victory and Indian motorcycles, has been on fire. Having pushed past tough competitors such as Honda and Yamaha, it dominates the North American market for off-road four-wheelers (from ATVs to UTVs and side-by-sides), contends for the top of the snowmobile market with Bombardier, and has seen its earnings and stock rise in reward.

However, its road in the motorcycle market has been a bit more arduous. After introducing its first motorcycle—the oil-cooled V92C—back in 1998, Polaris saw its Victory motorcycle business launch, stagger, and walk in circles for much of the next decade, as the company

addressed both built-in technical issues (the V92's oil-cooled engine didn't really cool well at the power levels desired, so it had to be redesigned to shed heat better) and learned how to play in its new sandbox. As the 20-oughts gave way to the 20-teens, Polaris' board of directors gave the motorcycle division an ultimatum: Get profitable or get out. The result was a renewed focus on Victory, the acquisition of the Indian brand, increasing investment in new engines and new products, and rapidly rising sales.

One of those new products you see pictured here is the Victory Octane, a motorcycle that Brandon Kraemer, Victory product manager, likens to a classic American muscle car: light, fast, and affordable. It's also a machine whose coming has been telegraphed for most of a year in a series of customs by famous builders: Roland Sands' Project

156 (as ridden by our own Don Canet at Pikes Peak); Urs Erbacher's Ignition; and Zach Ness' Combustion. All were built around the Octane's new V-twin, and the later ones used much of its chassis. The Octane is very much what a lot of Victory customers and potential customers were asking for: a middleweight Victory cruiser. Its low, 26.9-inch seat height and forward pegs place it firmly in the mainstream of the cruiser class, but its 104 hp, relatively short gearing, and six-speed transmission give it performance that positions it closer to an original 1,130cc Harley V-Rod than a 1200 Sportster.

At its heart, the Octane has a new, 1,179cc V-twin that's very closely related on the inside to the 1,133cc powerplant of the Indian Scout. It has a 2mm-larger bore, its own camshafts and tuning, and new cosmetics on its cylinder, cylinder-head, and engine-cover castings. Redline is up at 8,300 rpm, and peak torque is claimed to be 76 pound-feet, 4 more than the Scout. Wrapped around the engine



...THE VICTORY OCTANE, A MOTORCYCLE THAT BRANDON KRAEMER, VICTORY PRODUCT MANAGER, LIKENS TO A CLASSIC AMERICAN MUSCLE CAR:
LIGHT, FAST, AND AFFORDABLE.





ROLAND SANDS: Project 156 Pike's Peak Racer raced by Don Canet.



URS ERBACHER: Ignition Concept debuted at Milan 2015.

is a chassis that stretches out to a 61.6-inch wheelbase. The front tire is a beefy 130/70-18, while the rear is a relatively sporty 160/70-17. A single disc brake is used at the front. The steering head rakes out at 29 degrees and works with 5.1 inches of trail, standard figures for a cruiser where good handling is more important than an extreme raked-out appearance. The fork allows 5.1 inches of wheel travel, while the twin rear shocks permit only 3.0 inches of rear-wheel movement—again, not an unusual number for a cruiser where seat height concerns and “low” style can trump rider comfort on a bad road.

Kraemer freely admits that the Octane is a platform play and utilizes many of the designs and some of the components of the Scout. “They only share about 35 percent of their parts, however,” he offers, “either on a part-number or a part-cost basis. We wanted to leverage the parts that weren’t super customer facing, like the axle shafts. But anything that gives the bike its character is unique.”

The frame structure design is similar to that of the Scout, with large front and rear aluminum castings bolting directly to the engine and two smaller aluminum frame rails tying these together under the fuel tank. The front casting pro-

vides a cage where the radiator resides. The fuel tank carries 3.4 gallons of gas and hides an airbox underneath that displaces only 0.9 gallon less—essential volume to make good power while meeting sound regulations.

Our opportunity for the first ride of a production-validation-build Octane came in early December. The ride left from a secret Polaris garage in an industrial park in Lake Havasu, California, at the Arizona border and, seeking to stay away from phone cameras and curious people, ventured into Arizona while following the old Route 66 two-lane, a place where the Octane felt much at home.





ZACH NESS: Combustion Concept shown at the New York International Motorcycle Show 2015.

MIKE SONG: Victory Octane lead designer with his new production power cruiser.

As with the Indian Scout, the Octane's engine makes the first impression: sweet! It demonstrates what engineers can do when allowed to design and tune an engine not for maximum performance per cubic centimeter (after all, Ducati puts out a similar-displacement V-twin that almost doubles this power rating) but are allowed to just design for torque spread and rideability. The bike charges through first gear, reaching the rev limiter at about 45 mph, and pulls hard through second and third. One hundred mph comes quickly. But even more impressive is how smoothly the bike pulls in the midrange and from low speeds; leaving it in sixth, you could lug it down to 1,250 rpm, open the throttle, and (assisted by ECU-controlled throttle-by-wire) pull smoothly back up to highway speed. Similarly, this might be an 1,179cc twin with big pistons, but only the ghost of engine vibration ever reaches the rider. At 65 mph on the freeway, it's almost glassy smooth. At 75 to 80 mph, that ghost of a buzz touches you lightly, mostly through the pegs and slightly

through the grips, but only enough to let you know you're being propelled by an engine and not enough to annoy.

The transmission, too, shifts sweetly, with the *klunk-thunk* sound of the bigger Victory engines—thankfully—banished. While the belt-drive gearing is 8 percent shorter than on a Scout, highway rpm is still below 4,000 rpm and feels relaxed. The clutch requires a moderate 14 pounds of effort (Polaris claims) and engages smoothly. A lighter clutch effort might be the only improvement we could suggest to the driveline, and mostly that's for the anticipated female Octane riders.

The Octane places you in a classic cruiser riding position, with feet stretched out ahead and forward controls. The pegs are slightly farther aft than on a Scout, so, if you're 6-foot, you'll have some bend in your knees. The bars come back a little bit, so straight-armed riding puts a tall rider upright to slightly aft-leaning. The small windscreen breaks the blast a bit, but at 75 mph the inclination is to bend the elbows slightly and lean forward. Overall, the Octane feels nar-





row and low and light—Kraemer says the machine weighs 538 pounds in “shipping weight,” with little fuel in the tank. It will be interesting to see how it comes out when we get one back to our own scales.

Instrumentation is simple and useful. A single classically shaped round speedometer also includes inset LCD displays that can alternatively show either a numerical rpm reading or multiple trip mileages.

Through the switchbacks up and down the hills of western Arizona, the Octane demonstrated competent handling. The handlebar position gives substantial leverage, allowing you to roll the Octane rapidly into a corner—something

that narrower, lower bars wouldn’t give you with this steering geometry. The Octane has enough power that—with the front wheel raked well out from the rest of the bike—the front end can get light accelerating out of a second-gear corner. The Octane can certainly lean farther than many cruisers, requiring roughly a 32-degree bank before the lower exhaust touches down on the right. That’s probably more lean than most cruiser riders will reach. A few of the heaves and pits on the battered old pavement of Route 66 hammered spinal discs a little too much like shock-absorber bump rubbers, even while smoother pavement presented a

HIGH-OCTANE DESIGN

From the CORE concept to production

MIKE SONG had a problem. As one of the senior members of Polaris’ 30-man Industrial Design team, he was expected to compete on new projects if he wanted to work on them, and he wanted the next one: Victory’s midsize cruiser. He had already designed the extremely well-received Victory “CORE” showbike.

“If we were going to do a midsize cruiser, it was the perfect time to do something like CORE,” Song recalls. “But I was buried with the design work on the Indian Chief/Chieftain [his projects]. So I just dug in and did a design even though I had no time.”

Victory Product Manager Brandon Kraemer remembers Song simply doing a sketch on an overlay sheet right over the top of an image of CORE. In any case, it was good enough to be the winning design—which of course is right when Song’s problems really started.

“Trying to take a concept vehicle that had zero restrictions, trying to capture that with production cost and packaging constraints—that was a monumental challenge,” Song says.

Take the fuel tank, for instance. “We had to get a big airbox that we needed for power, and we had to get a minimum 3-gallon fuel tank to meet our range goals,” Song says.

The CORE, in contrast, had a skinny tank that didn’t have to worry about any of that. “We did six or seven fuel-tank variations trying to get close to the original design,” Song admits.

It even influenced the frame design. Notice that the engine makes up a big part of the frame structure, with only minimal backbone rails running over the top of the engine—which helped give the volume needed for the airbox and tank.

Song explains how he wanted to push limits with the design: “The Indian brand is heritage and history. When Indian came aboard [at Polaris], it allowed Victory to push further. If you look at the form language of the Octane, it’s very modern. Look at that final fuel tank: There’s nothing traditional about it. We wanted to push the boundary while staying in the American cruiser market.” —Steve Anderson



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JEFF ALLEN

THE NUMBERS

2016 VICTORY OCTANE

Price	\$10,499
Engine	liquid-cooled, 4-stroke V-twin
Displacement	1179cc
Bore x stroke	101.0 x 73.6mm
Induction	60mm throttle body
Transmission	6-speed
Front suspension	41mm telescopic fork
Rear suspension	dual shocks
Brakes	single disc front/rear
Front tire	Kenda Cruiser 130/70-18
Rear tire	Kenda Cruiser 160/70-17
Seat height	26.9 in.
Wheelbase	61.6 in.
Rake/trail	29°/5.1 in.
Fuel capacity	3.4 gal.
Claimed wet weight (no fuel)	548 lb.

comfortable ride. Could we maybe have at least 3.5 inches or even 4.0 inches of suspension travel?

Of course, according to Kraemer, Victory will help you tailor the Octane to your desires. There will be optional peg kits that bring the pegs backward somewhat and the bars a little lower or a little farther back or higher. There will be a rear passenger pad and pegs, soft bags, and performance parts. Victory certainly sees the Octane as the start of a new platform that will allow a range of machines to emerge—some through customization and others down the road from Victory itself. But what Kraemer seemed most proud of is this: The Octane will sell in the US for \$10,500. “The thing about American muscle and pony cars was that they were affordable—that’s what we wanted with the Octane.” *CW*



POLARIS: AMERICA'S OTHER MOTORCYCLE COMPANY

From Hetteen Hoist to the Victory Octane, a brief history



While almost every American motorcyclist knows about Harley-Davidson's history, reaching back to 1903, most are likely less familiar with the corporate background of Polaris Industries, America's other large motorcycle company, represented by the Indian and Victory brands.

Company-founding myths and traditions often tell a lot about their culture, and Polaris has a good one. It began as the Hetteen Hoist and Derrick Shop in Roseau, Minnesota, in the mid-1950s. Working after hours, several employees of the shop, led by David Johnson, built the prototype of what is considered the first practical light snowmobile. They were interested in the machine as a tool to get to hunting locations more easily. When shop owner Edgar Hetteen came back from a trip and was shown the prototype, he was both skeptical and disappointed that company resources had been used in its creation.

Although the first prototype was sold to meet payroll, the employees persisted, and by 1956 the Polaris Snow Traveler was in production, creating a new vehicle category.

Since then, the renamed Polaris Industries has grown

and expanded until it has become a Fortune 500 company with roughly \$5 billion revenue—close in size to Harley-Davidson's \$6 billion. While it originally bought engines for its vehicles (principally from Japan's Fuji Industries), in the last decades it now designs and manufactures its own motors and has invested in a large engineering facility in Wyoming, Minnesota. Polaris' CEO Scott Wine likes to describe the company as

opportunistic and quick to leap into potential new markets. While motorcycles are only about 15 percent of its business currently, Polaris leadership sees motorcycles as a major growth opportunity and is investing and hiring accordingly. It recently recruited heavily among displaced EBR employees, hiring people such as John Fox, who ran analysis and testing and is now head of Indian Motorcycle Engineering. —Steve Anderson



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**SADDLE UP FOR A
NO-FRILLS CRUISE
DOWN NOSTALGIA LANE**

By **Paul Dean**

Photography by **Jeff Allen**



**INDIAN CHIEF
DARK HORSE**

INDIAN CHIEF DARK HORSE



Unless you've been collecting Social Security longer than you care to admit, you have no personal recollection of the late 1940s. That, obviously, is because you either weren't around back then or were way too young to remember. But images of that nostalgic era are precisely what the three American-made cruisers seen here are intended to project. They're all dressed up—well, *down*, actually—in classic minimalist attire, a bare-bones style that quietly originated in the 1930s but grew more popular after World War II. They came to be called bob-jobs or bobbers, so named because their owners had cut them down to a minimum, often to emulate the flat-track racebikes of the era.

Due to current safety and emissions regulations, these modern-day production-line simulations—Harley-Davidson's Softail Slim S, Indian's Chief Dark Horse, and Victory's Gunner—aren't nearly as

stripped down as the bobbers hand-built during the Truman administration. They nonetheless do an effective job of harking back to the storied past rather than pointing to an uncertain future.

Besides being made in the USA, all three share numerous attributes. They're powered by narrow-angle V-twin engines of near-identical capacity; ride on hidden-shock chassis fitted with low-slung solo saddles and raked-out forks, rolling on fat tires front and rear; and are painted in matte finishes complemented by black trim pieces galore.

Not surprisingly, considering the company that manufactures it, the ultra-low, compact Slim S manages the best impersonation of the original bobbed look. The Chief Dark Horse—with its deeply valanced fenders, underseat bodywork, molded headlight shell, and illuminated warbonnet peering out atop the front fender—doesn't scream “minimalist,” but it does radiate the iconic signature of the Indian marque that was a player in the early bob-job movement. And the Victory,





HARLEY-DAVIDSON
SOFTAIL SLIM S



VICTORY GUNNER



THEY CAME TO BE CALLED BOB-JOBS OR BOBBERS, SO NAMED BECAUSE THEIR OWNERS HAD CUT THEM DOWN TO A MINIMUM, OFTEN TO EMULATE THE FLAT-TRACK RACEBIKES OF THE ERA.

a brand lacking any history further back than its 1997 beginnings, still pulls off the just-the-basics look reasonably well.

Engine performance isn't quite as uniform though. The Gunner's 106ci vee—the only SOHC, eight-valve motor of the bunch—makes the most peak horsepower, plus the Vic weighs 29 pounds less than the Harley and is a whopping 100 pounds lighter than the Indian. So, as you might expect, it supplies the best zero-to-everything acceleration. The 111-inch Dark Horse, on the other hand, produces the least horsepower but hammers out the most torque over the widest range of rpm, allowing it to grind out low-end and midrange performance on par with that of the Victory and the 110-inch Harley. (The standard Softail Slim only rolls with H-D's 103-inch engine; the S model's 110-incher adds \$3,567 to the MSRP.)

Despite any disparities in dynamometer, quarter-mile, and other power-related numbers, the engine performance you *feel* on these bikes is more similar than different. The Gunner delivers a slightly stronger rush at higher rpm, and the Slim S and Chief pull a little more smoothly and willingly at lower revs. But in the middle-rpm ranges where riders spend the most time, they all cruise beautifully, respond sharply, run smoothly, and shift



THE NUMBERS

BIKE		VICTORY GUNNER	H-D SOFTAIL SLIM S	INDIAN CHIEF DARK HORSE
Price	⇒	\$13,499	\$18,499	\$17,499
Dry weight	⇒	654 lb.	683 lb.	754 lb.
Wheelbase	⇒	65.1 in.	64.5 in.	68.4 in.
Seat height	⇒	27.0 in.	25.4 in.	28.4 in.
Fuel capacity	⇒	4.5 gal.	5.0 gal.	5.5 gal.
Fuel mileage	⇒	38 mpg	39 mpg	36 mpg
1/4 mile	⇒	12.49 sec. @ 104.78 mph	12.68 sec. @ 104.51 mph	13.30 sec. @ 99.08 mph
0-60 mph	⇒	3.6 sec.	3.9 sec.	4.5 sec.
Top gear, 40-60 mph	⇒	4.6 sec.	4.4 sec.	4.5 sec.
Top gear, 60-80 mph	⇒	4.8 sec.	4.8 sec.	4.9 sec.
Horsepower	⇒	82.8 @ 4920 rpm	80.9 @ 4750 rpm	76.3 @ 4490 rpm
Torque	⇒	103.7 lb.-ft. @ 2820 rpm	98.7 lb.-ft. @ 3800 rpm	106.8 lb.-ft. @ 2670 rpm
Braking, 30-0 mph	⇒	37 ft.	29 ft.	32 ft.
Braking, 60-0 mph	⇒	146 ft.	126 ft.	131 ft.

their six-speed gearboxes nicely. Given that these are not motorcycles competing for lap times and ETs, nothing about their respective power deliveries should be a deal-breaker.

Handling might be a different matter. All three are super stable in a straight line at speed over all kinds of road surfaces. And despite their considerable heft, long wheelbases, and kicked-out steering geometries, all are easy to lean into turns, a by-product of their low centers of gravity and wide handlebars. But with the Harley and Victory, a shortage of cornering clearance could be a no-go for some riders. At very mild lean angles, the Softail's fold-up footboards start showering sparks like a portable machine shop, followed by the bashing of the sidestand and other hard parts off the tarmac. The Gunner's folding footpegs (which it has instead of footboards) poke out so far from the chassis that they, too, bang into the road surface at meager lean angles, along with the front cylinder's muffler. No such theatrics with the Dark Horse, which has the best

cornering clearance of this threesome—enough so that fun but sensible rides along curvy back roads are not constantly punctuated with the *graunch* of metal on pavement.

In overall comfort, each of these latter-day bob-jobs is suitable for a full day in the saddle provided that higher speeds are visited only occasionally and for short spurts. Aside from perhaps the headlight shroud on the Chief, there is not a hint of wind protection anywhere.

On all three, the feet-forward, seat-to-footrest placement is comfortable—typical of what's found on most modern cruisers. The seat-to-handgrip reach is close to ideal on the Slim S and Dark Horse, while the Gunner's bars work best with the long arms of taller riders. The Indian's seat is longer and softer than the Harley's or Victory's, not only making for a cushier perch but also allowing a smidgen more fore-aft movement during extended rides.

So, too, is the Indian's suspension the most compliant. It allows the *loooooong*-wheelbase (3.9 inches longer than the H-D's, 3.3 in excess of the Gunner's) Dark Horse to comparatively glide over some road imperfections that would deliver





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THE CHIEF IS FUN TO RIDE, NO MATTER IF JUST PUTT-PUTTING AROUND TOWN, CRUISING THE OPEN HIGHWAY, OR FLOWING ALONG A REMOTE MOUNTAIN ROAD.

a small but unmistakable thump at the rear of the H-D and Vic. There's little difference in front-end suspension rates among the three, but at the rear, the Slim S is the stiffest and the Gunner marginally more taut than the Indian.

Braking is yet another area in which the Dark Horse excels with strong, consistent stopping power and excellent feel at the lever. Chalk it up mainly to its dual front discs, whereas the other two bikes have single front rotors. Harley's front system was greatly improved for 2016, helping the Slim S post the best stopping distances during our controlled braking tests; but out on the road under all manner of stopping and slowing conditions, the Indian provided the best all-around braking. By comparison, the Victory's

single-disc front has a wooden feel that contributed to the Gunner producing the longest stopping distances.

Okay, you ask, which of these three new-age bobbers takes home the gold? At the risk of sounding like a complete cop-out, the answer is, it depends.

Let's start with the Victory Gunner. Although manufactured by Polaris, the same parent company that builds the Indian, the Gunner came up a bit short here. It's a very solid, perfectly capable cruiser that performs well and does a decent job of looking the part. But aside from high-rpm engine performance, it didn't excel in any area—though it does, admittedly, have the lowest MSRP, and that alone could justify its purchase by anyone with a tight budget.

If you're in it for style and crave the closest thing to a classic bob-job that you don't have to piece together yourself, the Softail Slim S is the clear choice. It's not the fastest, the best-handling, the most comfortable, nor is it the cheapest (it goes for a thou more than the Indian and five grand above the Victory). But it works very well, feels good to ride, and it's also the coolest and most authentic, a product of the same company that built the foundation for the lion's share of the original bobbers. Harley-Davidson has been doing this a long time, and the results show it.

But if function plays a role in your program that's just as important as appearance, if not more so, the Indian Chief Dark Horse belongs on the top step of the podium. And why not? It boasts the best suspension, the best ride, the best comfort quotient, the best handling, and the best braking. It even exudes a greater sense of refinement than the others. Yes, its looks can be polarizing, since not everyone is a fan of swoopy, enclosed bodywork that makes the bike look heavier than it already is. But the Chief is fun to ride, no matter if just putt-putting around town, cruising the open highway, or flowing along a remote mountain road. The reborn Indian brand is just a few years old, but what its new owners have accomplished is impressive.

The bottom line is simple: The Softail Slim S is the best bobber, but the Chief Dark Horse is the better motorcycle. **CW**

UPS

HARLEY-DAVIDSON
SOFTAIL
SLIM S



- Nails the bobber look
- Most compact, tidy feel
- Military graphics an appropriate touch

INDIAN
CHIEF
DARK
HORSE



- Keyless remote-fob starting
- Most informative dash
- Pitch-perfect V-twin exhaust note

VICTORY
GUNNER



- Most affordable
- Best WFO acceleration
- Has the only automatic neutral finder

DOWN S

- To lean or not to lean? Not a question.
- Good brakes, need more feel
- Higher MSRP

- Bodywork hides some maintenance items
- Longer than a Smart Car
- Does it have to weigh 754 lb.?

- Max lean angle too restrictive
- No incremental fuel gauge
- Used a quart of oil during test

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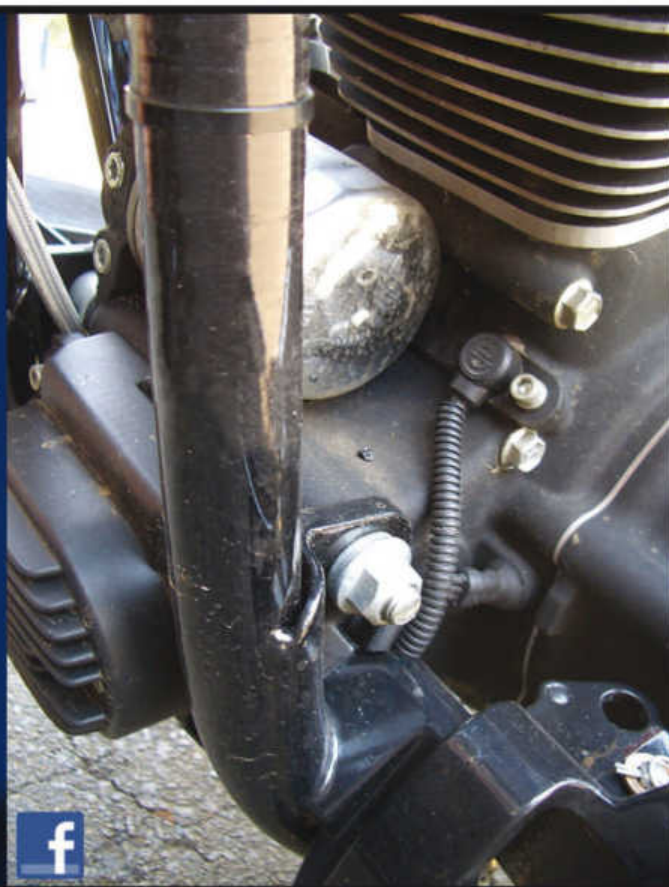
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CAFÉ CRUISE

THREE BLENDS OF V-TWIN, CAFÉ STYLE

By **Don Canet**

Photography by **Jeff Allen**

As I rolled out of bed lethargically, it was clear a bit of a pick-me-up was in order. This trio of hip café-inspired cruisers percolating in the *Cycle World* garage suggested we turn up the heat and hit the road in search of a good cup of joe. Cruising has always been about style, so it's no surprise that a resurgent café racer culture should influence motorcycles in this otherwise distinctly American space. The Star Bolt C-Spec put an entertaining twist on the standard Bolt, while the Kawasaki Vulcan S Café took a similar path this year with hopes of capturing the minds of young riders. And while the Harley-Davidson Sportster Forty-Eight isn't strictly café style, the bobber cues and sporty stance fit the stylistic mash-up perfectly.

To make sure we were sharp for our ride, our first stop was Hidden House Coffee in San Juan Capistrano, a few miles south of the office. Inside the historic cottage is a Wall of Honor adorned with old photos of US Marines. It felt appropriate I down an Americano prior to mounting the Sportster for the freeway stretch past Camp Pendleton en route to our lunch stop at Pier View Coffee Co. in the beachfront town of Oceanside.

The Forty-Eight's classic lines have been treated to a beefy fork and fat tire, slammed drag-style bar with under-mount mirrors, and stripped-down rear-end styling, all lending it contemporary café culture appeal. The slammed low-slung look leaves minimal suspension travel to soak up bumps much larger than minor pavement ripples, resulting in a ride that's harsh on rough surface streets and taxing on the freeway. Such is the price of style, something the Sportster delivers in spades.

While having the largest engine capacity of the three (nearly twice that of the Vulcan S) the Sportster also offers the most compact chassis and



**KAWASAKI
VULCAN S CAFÉ**



**HARLEY-DAVIDSON
SPORTSTER FORTY-EIGHT**

STAR BOLT C-SPEC



KAWASAKI VULCAN S CAFÉ



HARLEY-DAVIDSON SPORTSTER FORTY-EIGHT

narrowest waistline. Its 1,202cc Evolution engine provides fluid power delivery with plentiful torque throughout the rev range and produces a pleasing lode that emits subdued vibes, even when keeping pace with an 80-mph freeway flow. In mixed riding, the Forty-Eight's 2.0-gallon peanut tank was good for about 75 miles between top-ups. Perhaps an espresso is the more appropriate drink for this bike?

Speaking of which, a blended-mocha chaser after lunch elevated the pulse for a stint aboard the Kawasaki Vulcan S Café. Introduced a year ago as the Vulcan S, the addition of a stubby fork-mount fly screen is the sole premise for its Café name. Ergo fit options at time of purchase allow buyers to select among three saddles, two handlebars, and choice of three foot control locations.

A Ninja 650-derived liquid-cooled 649cc parallel twin injects the Vulcan S with sporting spirit and a horsepower endowment to make it capable of run-

ning with bigger steeds in the middle-weight-cruiser category. Engine vibes are notably higher in pitch than those of the V-twins here, largely due to a 9,500-rpm redline and gearing that dictates nearly twice the revs when cruising in top gear at similar road speeds.

Despite a stretched, raked-out look and lengthy wheelbase, the Vulcan's wide mid-height handlebar provides plenty of leverage, resulting in the lightest steering feel of our trio. This, along with excellent stability, compliant suspension, superb ABS brakes, and more cornering clearance, gives a nod to the Kawi Café when it comes to back-road play.

An unscheduled fuel stop for the Sportster allowed a seat swap onto the Bolt C-Spec for the duration of our cruise to Cafe Moto, a two-wheel caffeine junkie's destination of choice on the not-so-mean streets of southern San Diego.

A first impression astride the Star's taller saddle is mid-mount footrests that get underfoot and in the way at

stops. It also has an asymmetrical feel as the large airbox interferes with the rider's right knee. The roomy saddle is deeply padded and allows more fore-aft movement than the others—a blessing since the reach to the low-mount clip-on handlebar dictates a more prone position. Decidedly cool, this dedicated posture, along with piggyback reservoir shocks, fork boots, solo seat cowl, and racy graphics, combine to make the Bolt the most café of the lot.





STAR BOLT C-SPEC

A very weighty crank tames this 942cc air-cooled twin's throttle response, making the engine extremely easy to operate smoothly, albeit a bit less invigorating on the boil. Stability is superb, and the

HARLEY-DAVIDSON SPORTSTER FORTY-EIGHT



KAWASAKI VULCAN S CAFÉ



STAR BOLT C-SPEC



UPS

- Big Twin perks
- Quality fit and finish
- Grade-A Americana

- Peppy performance
- Light handling
- Ergo fit options

- Perfect canvas for customization
- Fork gaiters rock
- Rumbly cruise

DOWN

- Harsh ride
- Frequent fuel stops
- Most expensive

- Bland Starbucks styling
- Clubman café bars not optional

- Pegs under foot at stops
- Knee-knocker ergos
- Drags pegs in corners too easily

ride rivals the Vulcan's compliance. The only non-ABS model here, the Bolt also has the longest measured stopping distance, plus footrests and exhaust drag early in corners, belying the aggressive styling.

At first taste, the Vulcan S Café hits the palate like a decaf caramel macchiato—sweet, smooth, and easy on the nerves. But tip the throttle and this sporty 650cc cruiser comes on like an espresso double shot. A stout kick in a small cup!

Holding the middle ground in price and overall appeal, the Bolt C-Spec is a hipster's ticket to ride. Styling and performance are 90 percent there with great aftermarket support to add cream on top.

At \$11-large, the Forty-Eight carries a cost of admission that includes membership into a fraternity with more perks than a coffeehouse punch card: big(ger) twin presence/performance with an irre-

sistible look blending deep paint, black powdercoat, and a light dose of quality chrome in all the right places. It's an all-American brew that can't be beat.

Whichever your flavor, head to Café Moto and order the highly caffeinated high-octane 24-hour cold brew. Trust me, you'll be up for a spirited cruise home. *CW*



THE NUMBERS

BIKE		H-D SPORTSTER 48	KAWASAKI VULCAN S CAFÉ	STAR BOLT C-SPEC
Price	⇒	\$11,549	\$7999	\$8690
Dry weight	⇒	547 lb.	486 lb.	533 lb.
Wheelbase	⇒	59.3 in.	62.2 in.	62.2 in.
Seat height	⇒	27.3 in.	28.0 in.	30.0 in.
Fuel capacity	⇒	2.1 gal.	3.7 gal.	3.2 gal.
Fuel mileage	⇒	41 mpg	47 mpg	48 mpg
1/4 mile	⇒	13.23 sec. @ 98.18 mph	13.40 sec. @ 93.57 mph	13.87 sec. @ 91.17 mph
0-60 mph	⇒	4.3 sec.	4.3 sec.	4.8 sec.
Top gear, 40-60 mph	⇒	4.0 sec.	4.5 sec.	4.2 sec.
Top gear, 60-80 mph	⇒	4.6 sec.	5.0 sec.	5.2 sec.
Horsepower	⇒	61.6 @ 5550 rpm	53.5 @ 7150 rpm	50.8 @ 5350 rpm
Torque	⇒	67.8 lb.-ft. @ 3450 rpm	42.7 lb.-ft. @ 5650 rpm	58.0 lb.-ft. @ 2900 rpm
Braking, 30-0 mph	⇒	32 ft.	33 ft.	38 ft.
Braking, 60-0 mph	⇒	139 ft.	130 ft.	152 ft.

8TH ANNUAL

THE QUAIL

MOTORCYCLE GATHERING

PRESENTED BY TUDOR

SATURDAY, MAY 14, 2016 | 10:00 AM TO 4:00 PM
QUAIL LODGE & GOLF CLUB | CARMEL, CALIFORNIA

With more than 300 motorcycles on display and more than 2,500 guests in attendance, the 8th Annual *The Quail Motorcycle Gathering*, presented by TUDOR, features one of the world's finest and rarest collections of vintage and modern motorcycles.

Boasting live bands, a signature beverage pavilion, and a dedicated kids' area provided by MY Museum, *The Quail Motorcycle Gathering* truly has something for everyone! Entry is inclusive of a mouthwatering barbecue lunch, parking, event program, and gear valet service for those riding a motorcycle to the event!



HONDA – A HISTORY OF GREAT ADVENTURES!

In 1962, Dave Ekins and Bill Robinson Jr. departed Tijuana on two of the only Honda CL72 Scramblers in North America. Thirty-nine hours, 56 minutes later, a blurry-eyed Ekins checked in to La Paz, documenting the first motorcycle run down the Baja peninsula, breaking the trail for one of the greatest motorcycle adventures in the world — BAJA.

Join Honda in celebrating this and other highlights of two-wheeled adventure, as well as meet the all-new Africa Twin at *The Quail Motorcycle Gathering* and the *Cycle World Tour*.

See you in Carmel!



The Quail Motorcycle Gathering is excited to announce its continuation of the acclaimed "Legend of the Sport" series, this year honoring three-time AMA Superbike Champion, Reg Pridmore.

CALLING ALL MOTORCYCLES!

Enter a motorcycle for display at *The Quail Motorcycle Gathering* to be featured among some of the most reputable motorcycles in the world and be in the running to win a coveted *Quail Award*!



To purchase tickets to *The Quail Motorcycle Gathering*, or to enter a motorcycle to be on display, please contact The Peninsula Signature Events by calling 831.620.8879 or visit our website at signatureevents.peninsula.com.

Adult (ages 18+): \$75

Military/Student: \$60

With valid identification

Teen (ages 13 to 17): \$60

Children (ages 3 to 12): \$15

Children (ages 2 and under): FREE

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JOIN THE CYCLE WORLD TOUR SATURDAY MAY 14, 2016, FOR A LAP OF THE MONTEREY PENINSULA

Join *Cycle World* and friends Saturday morning before *The Quail Motorcycle Gathering* for a ride around the Monterey Peninsula.

The Tour is open to all road-legal motorcycles. Motorcycles entered in the show will receive special judging consideration as well as the chance to be named *Cycle World's* Best of the Tour. Non-show participants receive VIP parking, adjacent to the lawn.

Presented by



Space is limited. Sign up at cycleworld.com/cycleworldtour.

THE CYCLE WORLD TOUR



THE UN-CR

THE DIAVEL'S NEW X
FACTOR, WHICH IS MORE
OF A CRUISER YET NOT

By *Mark Hoyer* Photography by *Jeff Allen*



U I S E R



WHEN THE ORIGINAL DIAVEL ROLLED OUT AT the 2010 Milan motorcycle show, it was considered by some to be a broken promise from this brand known for exotic and beautiful superbikes and other sporting creatures with athletic DNA.

After one ride, we were not among the doubters. Ducati put a very sporting Italian stamp on the cruiser class and smoked off the line to take Best Cruiser two years running (sprinting?) in our annual Ten Best voting. It was light for a cruiser, wicked-quick, and turned pretty well for a machine with a 240mm rear Pirelli, even if it was designed for the bike. *And it was really fun.*

Now in 2016, the “Ducati cruiser” idea has been significantly rethought and redone to become the XDiavel, which joins the “standard” Diavel in the lineup.

“Paradigm shift. That was what we needed,” said Stefano Tarabusi, the man who worked on the X project. “Not only in terms of design—I’m talking about styling, aesthetic design—but also in terms of technical development, targets, approach, communication, and branding. The final result is what you see today: the new XDiavel, a real cruiser and a real Ducati, at the same time.”

He evokes a continuum like this:
Monster → Diavel → XDiavel → Traditional cruiser.

Mr. X gets a variable-valve-timing 1,262cc version of the Testastretta V-twin with 95 pound-feet of claimed peak torque and 72 pound-feet at 2,100 rpm, as well as an aesthetic makeover that includes cleaned-up cooling plumbing for a tidy look.

But the “real cruiser” steps were forward foot controls (adjustable along with seat and bars for 60 ergonomic variations) and a belt final drive.

Inspiration for taking this more cruiser-y path? A design team traveled to America and rode slowly, no lie, for months to better understand the American riding perspective. They learned about the abundance of straight roads, the culture, the styling, the open spaces. They learned to *relax*, which truly might be the one-word nucleus of the cruiser atom.

Rather than breaking Ducati’s brand promise, the first Diavel has expanded it. Now it’s been stretched to a factor of X. **CW**

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REV'IT!

REVERA



Check out our newest Adventure Rally video at www.cycleworld.com/adventurerally

EXIT THE DRAGON

S&S BUILDS A 160-HP
"SPORT" BAGGER. AND
A HARLEY-DAVIDSON
ROAD GLIDE HAS NEVER
BEEN MORE ULTRA.

By Joe Gustafson

Photos by
Armando Lorezana





The temperature was chilly with a chance of low-side. A crisp Wisconsin morning that Tumblr fanatics dream about, with curving roads, dense foliage, and a sheen of frost. And here I was standing in front of a 167-rear-wheel-horsepower bagger that was shivering with fury.

Hooray.

What brought me here? S&S Cycles and a dare. I said some unkind things about baggers a few months ago, and David Zemla, VP of marketing for S&S, reached out with the retort, “Want to come up and ride The Dragon?” Which is an unusual text, but I was interested after just finish-

ing up a *Game of Thrones* binge.

The Dragon referred to S&S’s 143ci Harley-Davidson Road Glide Ultra with all the trimmings. Big T143 motor. Sportbike suspension by Öhlins. Sportbike brakes by Lyndall and Brembo. Carbon-fiber wheels by BST. Sportbike tires by Pirelli. Electric-over-air-shifter by Pingel. And a catalog assault of S&S parts to make it run, ride, and scare the breakfast out of you in one engine kit for \$9K, plus the cost of labor and those other fancy parts, all the way down to a chain-drive conversion.

The result? One hundred and sixty-seven horsepower to the rear wheel, along with 170 pound-feet of torque. That’s 55 more pound-feet than a Kawasaki H2R, attached to a 757-pound, fully dressed bagger that’s 81 pounds lighter than stock. And it remains fully dressed



THE RESULT? ONE HUNDRED AND SIXTY-SEVEN HORSEPOWER TO THE REAR WHEEL, ALONG WITH 170 POUND-FEET OF TORQUE.

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in the full sense of the term, with all the electronics and bags attached, though you can't read the infotainment screen at idle since your vision is blurred from the vibration.

This is S&S's "racebike," and it is also daily ridden because the employees of S&S have a sense of humor about both "racebike" and "daily" going back all the way to the company's original creation, the Tramp.

If you doubt how a package like this can stay in one piece, the owner, an employee, has ridden it 15,000 miles, and the bike went for 20 hours straight in Sturgis in the hands of amateurs; even the Rivera Primo lockup clutch is intact. And it runs nines in the quarter.

Why would anyone do this? Put simply, it's in the company's blood. Started by George Smith in the 1950s with performance pushrods, S&S Cycle has been making V-twin things punch the atmosphere in a straight line since then—from salt to strip and at any intersection in between.

The headquarters is littered with 200-mph Harleys, land-speed bikes, and unfortunate billet holdovers from the heady days of Pro Street.

All S&S products are prototyped, developed, built, and warehoused right there in Viola. In fact, the materials

are all sourced from a 300- to 400-mile radius. It typifies the Midwest mind-set: *If you want something done right, you better stuff it full of horsepower.*

And have horsepower it does. The Dragon is overtly pissed off at idle. Lock-up clutch chattering in the 3-inch-belt open primary and loud pipes that scream not of retirement rebellion but of killer intent. Everything has been butched up from a stock Road Glide.

The smooth and easy clutch of the OE Road Glide has been replaced by one that feels like it's from a "real" motorcycle, less forgiving and with crisp engagement. The gear change sounds like a rifle chambering. And then you start to ride the bike, and it becomes the most docile pussycat ever. Dragon? As if.

You get confident. You give it some throttle. And the earth turns upside down and you make amends with whichever deity is in office that day. The hit is instantaneous and violent.

Traction happens somewhere between third and fourth—as was instructed but ignored because freedom. First is useless. The suspension and brakes? Great, but they're still saddled to a bagger, and feel is noticeably lacking on turn-in, which leads to guesswork. The floorboards are in the original location, so cornering clearance is limited, if still pretty decent for a bagger.

It is relentless, and excessive, and typifies American fast—that good ol' boy simple recipe of punt and pray that makes muscle cars adored but with the fit, finish, and technical expertise to make it reliable, smooth, and well mannered.

Could you ride it every day? Yes, and there are apparently 64 takers out there and counting. Is it worth \$40K? In terms of the maximum of the maximum, yes. It is as decadent and useless as can be and is all the better for it.

If you want the most obscene sleeper on the planet, this bike is for you. **CW**



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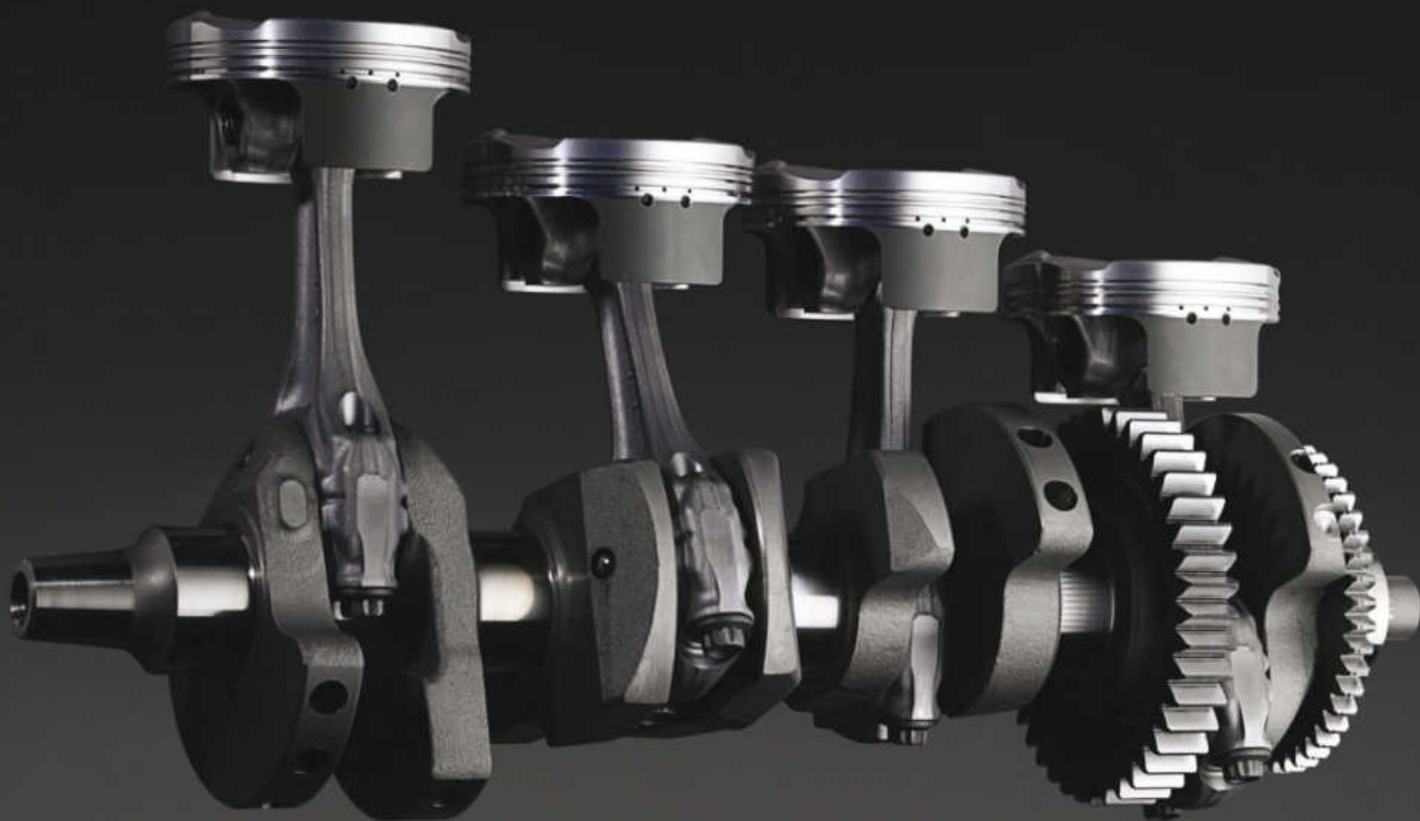
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BY RAY NIERLICH



Not your ordinary inline-four crankshaft: The "cross-plane" Yamaha YZF-R1 crank "ungroups" pistons to smooth the effects of its inertia on the rear tire.

CRANKS AND TRACTION

Q: I noticed that the crank in a recent article comparing flat-plane to crossplane designs showed a crossplane crank where the two pistons on the left would be on the way up, while the other two were on the way down, hinting that they may fire an even 360 degrees apart (half the 720-degree cycle). How does this affect traction compared to the “big-bang” crank where all four pistons fired within a short 180 degrees of one another, breaking the tire loose yet allowing it to hook up again with 540 degrees of coasting?

CURT TRICARICO
CYCLEWORLD.COM

A: I'll do my best to channel Kevin Cameron: The first scenario you refer to, two pistons rising with two falling, with even firing intervals, is a flat-plane design. It is up to the designers if they want to fire pairs of cylinders every 360 degrees (180 degrees in two strokes, à la the TZ750) or the conventional once every 180 degrees (90 degrees in two strokes). Way back in the 1970s and 1980s, it was typical to have “normal,” evenly spaced firing orders. Yamaha was first to figure out that firing pairs yielded better traction. Following Yamaha's lead, the status quo for racing in the late '80s changed to firing pairs of cylinders every 180 degrees (two-strokes).

Then Honda went to its “Big Bang” four-cylinder in '92. This gave firing intervals 68 degrees apart, with 292 degrees of “quiet.” It worked. The longer “quiet” time allowed the rear tire to return to a wider footprint and regain traction in between firing pulses, and—voilà—everyone else had to copy Honda to catch up.

The four-stroke “big-bang” engine you describe works the same way. The longer interval between firing allows more time for the tire to hook up. Why is this important? Dredging up fuzzy memories from Physics 101, I recall that the coefficient of friction for a static object is slightly greater than that of a rolling object (due to minor changes in the contact patch), and it is signifi-

cantly greater than a sliding object (the contact patch is greatly reduced as it skips across the high spots). In layman's terms, odd firing pulses act for acceleration like antilock systems do for braking. The rapid grip and release cycling helps the tires remain in rolling state instead of sliding state, thus you get better drive out of the corners.

CLOGGED THUNDERCAT

Q: I have a 2004 Yamaha YZF600R Thundercat that has sat for a while. When I put gas in it and got it started, gas began running out the airbox tubes. I mean a lot of gas spilling everywhere. I haven't taken the carbs off yet because I'm a little nervous about it. I have worked on my carbs on a CBR-F2, but the Yamaha is injected. Are they like regular carbs with jets? Anything you can do to help would be great.

JOHN “WOODSY” WOODS
ASHLAND, KY

A: Not sure what you mean by saying it's injected but that you haven't pulled off the carbs, John. But your YZF600 is definitely carbureted. It is not a sign of weakness to buy a shop manual. One or more of the floats have stuck or broken. Pull the airbox back so you can see which carb (or carbs) is flooding. Fuel will be pouring out, so be careful! You probably like your eyebrows. You could give the offending carb body a couple of sharp taps near the float bowl flange with a small hammer and punch, and see if it quits flooding. I hesitate to recommend this approach because you can damage something expensive if you don't know your limitations. Hit it hard enough to jar the stuck float, but not so hard as to ding the body or break any plastic parts.

Didn't work? Pull the carbs and be prepared to give them a thorough cleaning. If your bike was fuel injected, you wouldn't have all those slides, diaphragms, jets, needles, floats, and myriad drilled passageways to clean. The incidence of varnished, stuck, or corroded fuel system parts has gone up exponentially since the advent of etha-



JEFF ALLEN

TOOL TIME

CYNTUR JUMPER PACK MINI

DON'T BE LEFT FOR DEAD

A dead motorcycle battery has stranded us all, right? Luckily, most of the time a dead battery is discovered in the comfort of our own garage—due to maintenance neglect—and really isn't a huge inconvenience. But then there are the times when you really are in a pickle.

We've been there too, and that's why a compact battery jump starter like Cyntur's Jumper Pack Mini (\$100; cyntur.com) can save the day. Weighing less than 1 pound, the unit measures a compact 6.0 x 3.3 x 1.3 inches, so it won't take much space in your luggage or backpack. The included case stores included jumper cables and AC outlet charger.

Designed to be capable of jumping an eight-cylinder automotive engine, the Cyntur's 12 ampere-hour lithium-ion battery's capacity easily jumps a motorcycle with its 400 amps of peak cranking power. After discovering my Husqvarna TE310's battery had bitten the dust, I used the Cyntur to instantly bring the bike to life. I also had the opportunity to jump a neighbor's six-cylinder Toyota, which barked to life without hassle. In both cases, the battery-level indicators on the Cyntur unit didn't fall below 75 percent remaining charge.

The Cyntur also has a 2.1-amp/5-volt USB output, which is great for keeping your smartphone or small electronic devices charged on road trips, and it also includes a built-in 200-lumen LED flashlight. —Blake Conner



GOT A MECHANICAL OR TECHNICAL PROBLEM with your beloved ride? Perhaps we can help. Contact us at cwservice@cycleworld.com with your questions. We cannot guarantee a reply to every inquiry.



BEST USED BIKES
EARLY EVOLUTION
HARLEY-DAVIDSON
SPORTSTER

YEARS SOLD: 1986–2003

MSRP NEW: \$3995 ('86 XLH) to \$9595 ('03 1200C)

BLUE BOOK RETAIL VALUE:
\$2975 ('86) to \$3940 ('03)

BASIC SPECS: Begin with the best of both worlds. The ridged-mount Evo Sportster was lighter, faster, and more reliable than the very first XLs,

the iron-top version. On the other side of this era, the rubber-mount XLs are less nimble, more expensive, and no faster than the first alloy-top versions. That said, we begin with the very basic. That first Evo model was the XLX, a loss-leading stripper: solo seat, black only, 883cc, one front disc, no tach, etc. It was offered for \$3,995, and, as you'd guess and the factory hoped, they sold all they could make. Then in normal Harley fashion, following that was an 1,100cc option with paint schemes, dual seat, and so forth then a 1,200cc option. In 1988 The Motor Company improved the front suspension. The early '90s brought belt drive along with a five-speed gearbox in place of the former four-speed unit. In '96 came a Sport option with more ride height for greater lean angle, increased suspension travel, and a larger fuel tank. The 1200 Custom with disc rear wheel and spoke 21-inch front wheel was another new addition.

WHY IT'S DESIRABLE: First, because these early bikes sold by the thousands and as many of the buyers moved up to bigger Harleys, there are literally thousands of used XLs near wherever

you are. Next, you can find every part or extra you need or want. Most dealers have or can get all parts, and, failing that, there's a huge aftermarket. As a clincher, these are basic air-cooled motorcycles with gravity feed from tank to screwdriver-friendly carburetor. Fewer parts means fewer things to go wrong, and if there is a breakdown, you can likely fix it at curbside with hand tools.

THE COMPETITION: No offense intended, but recall the words of President and General U.S. Grant. He could recognize two tunes, he said. One of them was "Yankee Doodle" and the other wasn't. With that in mind, for the enthusiast in search of a Big Twin with traditional looks and specs that is as reliable and fast as a new bike, the only competition has to be the revived Triumph Bonneville. It's a shade newer and more expensive but also based on now-vintage machinery replaced by newer and bigger versions. Even so, odds are that anyone whose search begins with looking for a sound used Sportster likely knows there are two brands of motorcycle: One's a Harley and the other isn't.



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nol. I almost guarantee this is at the root of your problem. Dive in!

MORE ELECTRICAL WOES

Q: I had the same problem as Michael Huss (*Service*, Jan./Feb.) with a '91 H-D FXR. The spark plugs need to be the resistor type. The ignition was being interrupted by static feedback from the plugs that I had purchased from an auto parts store. I had bought non-resistor plugs and got the problem of intermittent shut-off. While at Daytona, when talking to an Aero-charger rep, he let me know they had solved the same problem. I am betting your ignition and plugs are on the same side of the bike, like the FXR.

CARL KELLY
SAN DIEGO, CA

A: Right on, Carl. Older Harleys are known for secondary ignition interference problems. Bikes have short plug leads, so even if they are resistor-type wire, they don't have much resistance. Resistor spark plugs and/or ends help. Newer Harleys have better shielding and thus aren't as sensitive to the wrong plugs being fitted, but why ask for trouble?

HOT-START NINJA

Q: My 1990 ZX750F Kawasaki with 50,000 miles has a hot-start problem, like the fuel-injected Harley-Davidson in the May issue, but my bike is carbureted. What could cause the same issue with my bike? After it sits for about two minutes the bike will then start up.

KELLY RANDALL
PLEASANTON, CA

A: Almost always, when a carbureted engine such as your ZX750 heat soaks (that is, all the parts that are cooler when running—like carbs—get heated up by lack of airflow when parked hot), it will go rich. Injected engines go lean. The symptoms are similar, but the remedy is not. In your case, I suspect that spark is weak and most likely caused by bad coils (your bike has two). Less likely is that your carbs are flooding; ethanol makes rich hot-starting symptoms worse. Is your gas mileage lousy lately?

Before chasing your tail on any fueling problem, always check ignition first. You need a pair of insulated pliers to do a coil reserve-voltage test. It takes at least

15,000 volts to fire the typical spark plug in an engine, so the coil has to be able to provide that voltage plus a good amount in reserve.

Coils usually fail when hot, so get the engine warmed up. Then, at idle pull one of the HT leads off a spark plug and see how big an air gap you can make and still fire the plug. It must be able to fire the plug while jumping an arc across at least another quarter inch (preferably more). Check each plug in order. If the

spark can't jump a gap, the coil is bad.

Also, check for arcing from the plug wires to ground by misting water on them (engine running). Water will encourage misfiring or arcing. Check for low battery voltage, low compression, correct spark-plug gap and insulator color, which should be nearly white on current fuel (dark equals rich). The most common cause of rich running are: a plugged air filter, broken fuel floats, and worn main needles and needle jets. **CW**

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VIEW FROM INSIDE THE PRODDER



RACING A LEGEND

Sampling a Spondon Yamaha
TZ750 roadracer at speed

By Nick Ienatsch



high-sided the TZ750 more than any other bike I've ridden."

Dead silence from me. I was four days away from racing Russ Bigley's Yamaha TZ750.

Kenny Roberts continued: "The thing was just so much better than the tires we could get. I'd get it in there and want to pick up the throttle and get going... It would just come around on me."

I gulped nervously.

"I know the TZ700 [predecessor of the 750] brought on the retirement of a lot of racers," the three-time Grand Prix World Champion continued. "Back then, those guys would run a bike into the corner at 80 miles per hour and exit at 75 miles per hour. The TZ wanted to get in at 80 and exit at 100. It wanted to shake its head everywhere and you had to ride through that. A lot of those older guys couldn't adjust."

I'm not really ready to retire, I whispered to myself. "Um, Kenny... How does the 750 rank on your favorite-bikes chart?" I squeaked, hoping for a glimmer of positivity about my upcoming AHRMA weekend at New Jersey Motorsports Park.

"Oh, it was my favorite until I got on the OWs, the factory stuff," he admitted. "Before that, I couldn't wait to get my new 750 each year. The factory did a great job of bringing it along, making it better. Those things were freight trains. The only thing that ever stopped us was little parts like the chain adjuster or something else minor breaking. Hey, on modern tires you're going to enjoy it. It's going to be cool."

The King was right: It was cool. And exhilarating, and a bit frightening, and totally absorbing. Nothing gets a





IN THE CLUTCH: Routing 144 hp through a 40-year-old clutch design has its challenges. An O-ring leak contaminated the dry plates with engine oil aborting the second practice, and experimental plates just couldn't generate enough clamping force.



OLD TECH TALK:

GP bikes demand a lot of discussion. Every practice ends with a fast lap prior to a high-rpm "plug chop" so the spark plugs can be read to determine mixture. Highly tunable Lectron carbs feed the two-stroke need. This racer has ultra-clean, super-smooth pickup.

rider focused like a 38-year-old two-stroke 750cc four-cylinder that high-sided KR a few times; I brought focus and curiosity to New Jersey Motorsports Park in equal measures.

My curiosity came from two sources. The first was the legend of the TZ750. Over the years I've heard stories from riders of that era, tales of headshaking tank-slappers at 175 mph toward Daytona's chicane in a mob of 35 bikes. All my heroes got legs over the biggest TZ at some point, and I was lucky enough to see them in action at Daytona in 1984, an experience that changed my life.

The change came from the wildness of this motorcycle and the insight it gave me into the mind of a pro racer. We like to think our sport is "motorized ballet" and "grace at speed" and other poetic descriptions, but that weekend at Daytona showed me that unflinching desire and enormous courage were present in the best riders. But in 1984, at 23 years old, I had never been to an AMA race, and when two mechanics bump-started a TZ750 to life behind me I would never be the same. Three years later I bought one.

And that was the second

source of my curiosity. My '79 model was built into a beautiful streetbike by Chris Geiter and Steve Biganski, and it has given me many hours of pleasure. It's a tiny, uncomfortable, loud, stinky, smoky masterpiece of man's desire to propel himself across the tarmac as quickly as possible with no concession to comfort or political correctness. The TZ's raw purposefulness exposes itself in leg-burning pipes, short, low clip-ons, and minuscule seat. And every time I ride my streetbike I wonder what it would be like to race. Crazy. But how crazy? Could I master it? Was I man enough?

I was about to find out. I arrived at New Jersey like a 54-year-old kid, prepped for the opportunity of a lifetime to step into Kenny Roberts' boots. It was not just going to meet Santa Claus but ride in his sleigh.

And this sleigh was special, one of only three aluminum Spondon chassis in existence. This 1983 chassis held a 1977 TZ engine with a liberal sprinkling of YZR parts put together by Russ Bigley with mentoring from Kurt Lentz. TZ followers know those names, and it's fair to say





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these two are leading the world in TZ750 development.

The bike I met at NJMP on Friday morning was not a piece of perfect jewelry primed and prettied for a show. I likened it to a veteran boxer with a bent nose and cauliflower ear. Would it still be able to take and deliver a blow? Bigley and Lentz haven't wasted time and money with intensive paint schemes or tricky powdercoating, instead putting the effort into going, stopping, and turning.

And let me tell you, this thing goes, stops, and turns.

The going comes from 144 rear-wheel horsepower pushing 300 pounds with fuel. The power delivery is best described by imagining Jimmy Hendrix on stage with his axe plugged in and the amp at max. He strikes a single note and it's off-key. As the discordant note blasts around the amphitheater Hendrix deftly twists the tuning peg and the tone becomes perfect, brilliant, and slices to the soul of all present. That twist of the tuning peg happens at 7,400 rpm on this TZ750, and from that moment to 10,800 rpm the music is unmatched. You want to listen to it all day.

The turning part didn't come easily to Bigley and Lentz. "The Spondon's front downtubes and swingarm area couldn't handle the power we were making," Bigley says. "We had to remake the tubes with solid stock and strengthen the swingarm pivot."

A big step came with 17-inch wheels that could hold 120 and 180 rubber while FZR1000 chain adjusters added valuable swingarm length. An Öhlins mono-shock is matched to a CBR900RR fork revalved by Evan Yarnell. The chassis works.

The Honda runs Brembo calipers mated to a Brembo master, a vital part of the package. The bike hits so hard that lack of confidence in the brakes would be a big deterrent to life, limb, and lap times.

I entered three races at this AHRMA round: Saturday's Open



Two-Stroke and Formula Vintage, and Sunday's Open Two-Stroke.

Motojournalists live, or should live, in a 95 percent world. We leave something on the table because we're rarely racing our own equipment or riding something cheap. Bigley's TZ750 is valued north of \$75,000, and I didn't want my unpronounceable last name to be replaced with "the-guy-who-crashed-the-TZ750." Bigley told me he brought no crash spares and if I tossed it, the weekend was over.

My first two laps were cautious on this 38-year-old bike with a giant-killer legacy. By lap three the temperature was fine at 75 degrees and my brain was relaxing as my body took over. Nothing could fit in my mind except the nuances of riding a TZ750 around Thunderbolt raceway. Every moment of lapping had force in it. At no point could I simply lie on the tank and say, "Ah, this is just a relaxing motorized ballet, and I am poetry in motion." At no point did the bike feel slow or disappointing. It was all I'd hoped for, all I'd trained for. It was the bike we all try to

own or build: too much power in a chassis that stops and turns. It wanted to wheelie or spin the tire on every exit and every corner entry was just this side of crazy: I was enthralled.

Bigley and Lentz, guys with thousands of racing miles on TZ750s, smiled at my immersion in this bike. They know.

A few tweaks to the setup and we went quicker. Nothing in either of my classes could come close to Bigley's bike, and someone said we ran the fifth- or sixth-quickest laps of the weekend—not bad for a 38-year-old bike on Dunlop Q3s, considering the Panigales, EBRs, Pierobons, TZ250s, and Bimotas also racing AHRMA. We won three of three.

The most dominant motorcycle in the two-stroke era of road racing didn't disappoint. It's everything you've heard and read. The brutality of the power delivery in Roberts' day has been harnessed by modern tires and the development Bigley and Lentz put into this bike. For three days in New Jersey I rode an icon and raced in Kenny Roberts' boots on a motorcycle worthy of its legend. **EW**

THREE MEN AND A TZ: Many feel that Kurt Lentz (left) and Russ Bigley (right) have the best-developed TZ750 on the planet with this Spondon-framed model bristling with YZR parts and three decades of development. Our "vintage" author thought twice before accepting the offer of racing a 300-pound old-school two-stroke that makes more than 140 hp. He smiles bravely into the camera prior to a riotous AHRMA weekend on the most legendary road racer in history.



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